DOCUMENT RESUME

ED 112 367 CS 002 151

TITLE	The Formula Phonics Reading Chain Program at Patterson Road Elementary School; A Video Trip to Patterson Road School.
INSTITUTION	Integrative Learning Systems, Inc., Glendale, Calif.
PUB DATE	75
NOTE	54p.; See related document ED106846
EDRS PRICE	MF-$0.76 HC-$3.32 Plus Postage
DESCRIPTORS	Ability Grouping; *Decoding (Reading); Developmental Reading; Elementary Education; *Grouping (Instructional Purposes); *Phonics; Reading Instruction; Reading Processes; *Reading Programs; Reading Skills; *Videotape Recordings
IDENTIFIERS	*Formula Phonics; Videotape Reading Chain Program

ABSTRACT

A new kind of reading-language processing system, which has been in use at the Patterson Road School (Orcutt, California) since December 1972, is described in this document. The program consists of two ungraded reading chains of twelve groups each (determined by reading comprehension) which meet for 45 minutes daily, read material above the group's tested total reading level, and decode unfamiliar words using the Formula Phonics System learned by videotape at the beginning of the program. Reading matter--short stories first, then novels and other works--is chosen for literary worth and interest level and instruction is designed to teach critical thinking with open-ended questioning and to reinforce thinking processes and reading skills by writing tasks keyed to the reading experience. Pupils move up on the chain upon the teacher's recommendation. Detailed information about the reading chain design, staff development procedures, specific methodology, and the school is included in this document. A separate leaflet contains a discussion of a program evaluation scale and an evaluation-contrast form to be used after viewing "Video Trip to Patterson Road School." (JM)

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The Formula Phonics Reading Chain Program

at

Patterson Road Elementary School

A Dissemination-Replication Study

Integrative Learning Systems, Inc.
Glendale, California

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Introduction

Patterson Road School

This publication is intended to acquaint you with a new kind of reading-language processing system called the Formula Phonics Videotape Reading Chain Program and with the school where much of the research and development which led to that program design was conducted. Three dissemination tools have been developed to bring information about Reading Chain programs to educators. These are:

1. This Dissemination-Replication Study
2. A four-page brochure containing a description of the program and an evaluation-contrast scale
3. The television production, *A Video Trip to Patterson Road School*

Patterson Road School is the subject of these dissemination tools because the Reading Chain-Language Processing Program used there has been selected by the American Institutes for Research for inclusion in the nationally disseminated catalog of America's most effective reading programs which they prepared for the U.S. Office of Education's Right to Read Program. Rather than have the school bombarded with written inquiries about the program or made subject to unlimited visitation, *A Video Trip to Patterson Road School* was produced for use by the educational community and is distributed by Integrative Learning Systems.

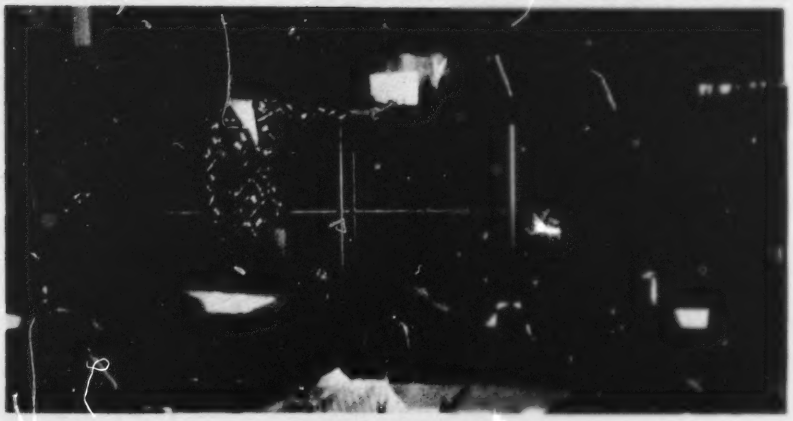
Most questions about the school's Reading Chain are answered during the video program. However, you should know that all classroom sequences and interviews were taped on-site at Patterson Road School on May 22, 1974. At that time third through sixth graders had been in the program 16 months and had worked through 11 rotations of the Reading Chain. Second graders had been in the program eight months and had gone through five teacher rotations. Except in the *Misty of Chincoteague* and *Flowers for Algernon* sequences, where students are processing pre-read material, all groups are reading and processing material which they had not previewed. When the program began, median I.Q. at Patterson Road School was 103 and district-wide was 105.

In May, 1974, the same month in which the Dialog Groups were videotaped, all Reading Chain students at Patterson Road School were tested with standardized reading tests. The table on page 3 shows median reading scores for each grade level at that time. A more detailed study of the reading scores of the Patterson Road boys and girls is found in the "Learner Verification Study" which begins on page 18.

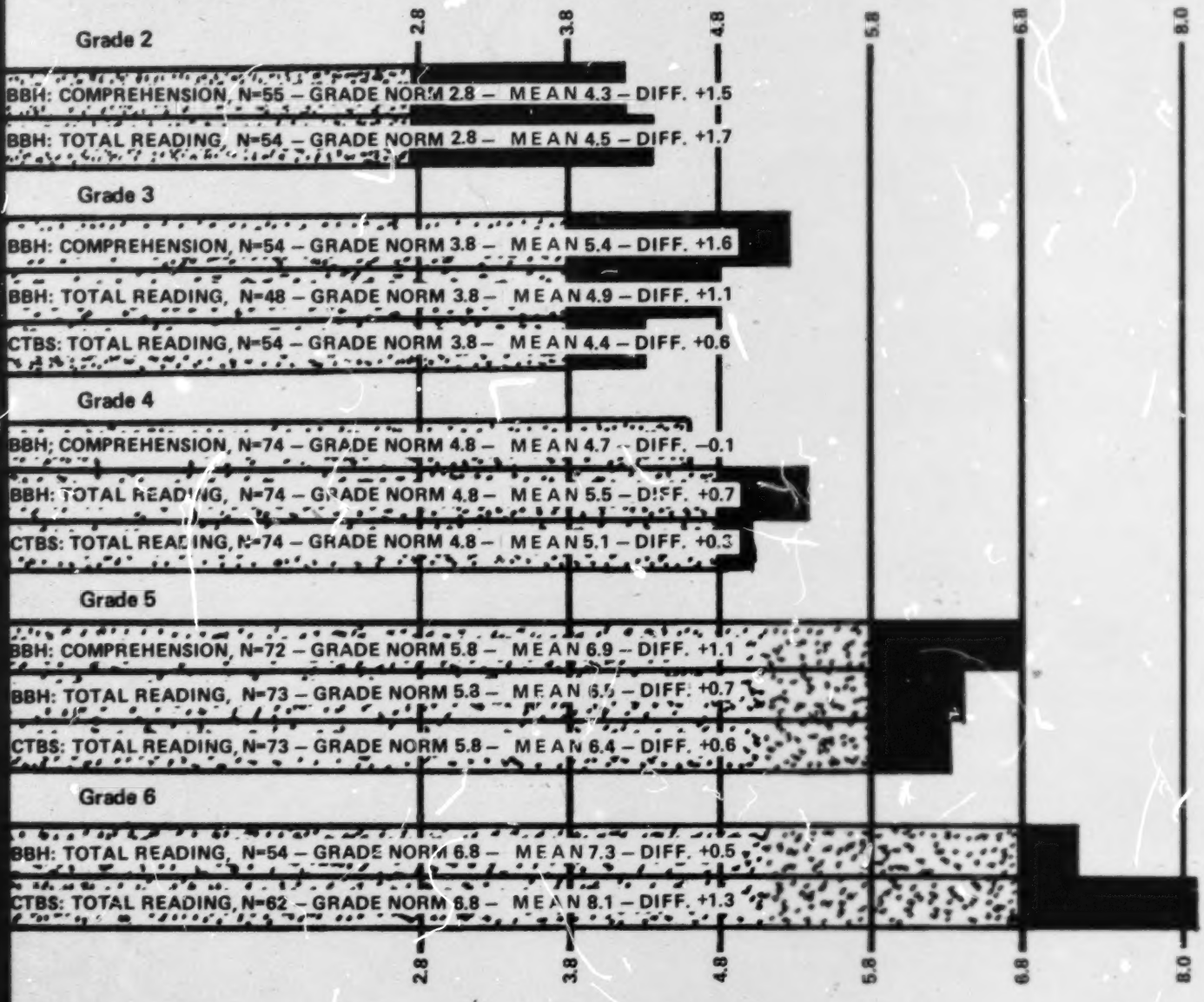
You will find more detailed information about the Reading Chain design, staff development procedures, specific methodology, and the school itself in the pages which follow and, of course, during the video trip.

Reading Chain Students
Patterson Road School

Video Tape Patterning, Patterson Road School



BBH = Bond, Balow, Hoyt Reading Test, Pub. Lyons and Carnahan, Inc., 1968
CTBS = Comprehensive Test of Basic Skills—Form S, Pub. McGraw-Hill


2.8
3.8
4.8
5.8
6.8
8.0
Grade 2
BBH: COMPREHENSION, N=55 – GRADE NORM 2.8 – MEAN 4.3 – DIFF. +1.5
BBH: TOTAL READING, N=54 – GRADE NORM 2.8 – MEAN 4.5 – DIFF. +1.7
Grade 3
BBH: COMPREHENSION, N=54 – GRADE NORM 3.8 – MEAN 5.4 – DIFF. +1.6
BBH: TOTAL READING, N=48 – GRADE NORM 3.8 – MEAN 4.9 – DIFF. +1.1
CTBS: TOTAL READING, N=54 – GRADE NORM 3.8 – MEAN 4.4 – DIFF. +0.6
Grade 4
BBH: COMPREHENSION, N=74 – GRADE NORM 4.8 – MEAN 4.7 – DIFF. –0.1
BBH: TOTAL READING, N=74 – GRADE NORM 4.8 – MEAN 5.5 – DIFF. +0.7
CTBS: TOTAL READING, N=74 – GRADE NORM 4.8 – MEAN 5.1 – DIFF. +0.3
Grade 5
BBH: COMPREHENSION, N=72 – GRADE NORM 5.8 – MEAN 6.9 – DIFF. +1.1
BBH: TOTAL READING, N=73 – GRADE NORM 5.8 – MEAN 6.5 – DIFF. +0.7
CTBS: TOTAL READING, N=73 – GRADE NORM 5.8 – MEAN 6.4 – DIFF. +0.6
Grade 6
BBH: TOTAL READING, N=54 – GRADE NORM 6.8 – MEAN 7.3 – DIFF. +0.5
CTBS: TOTAL READING, N=62 – GRADE NORM 6.8 – MEAN 8.1 – DIFF. +1.3
2.8
3.8
4.8
5.8
6.8
8.0

The Search

During school year 1973-74 the American Institutes for Research, under the sponsorship of the U.S. Office of Education's National Right to Read program, conducted a study to locate the *25 most successful reading programs in the country* and *to develop in-depth information packages which will help other educators to replicate these programs.*

In its May 5, 1975 "Washington Monitor" section, **Education U.S.A.** stated, *The search, conducted for USOE's Right to Read program by the American Institutes for Research (AIR), encompassed all reading programs from preschool to adult funded by a variety of sources, making it the most comprehensive of its kind ever done.* During the search more than 1500 programs were studied by AIR and of that number 27 were recommended to Right to Read. During the nominating process, AIR Project Director John E. Bowers wrote about the search:

> *The program or programs that you nominate may operate at any level from preschool through adulthood. A program, for our purposes, is defined, in the case of a school district, as one which is used throughout the school building at a given grade level, in a cluster of grades, or for a special population (such as a program that is being implemented throughout the primary grades or in all eighth grades or for all deaf children). An effort leveled at only one fifth-grade class where there are other fifth-grade classes would not qualify as a program. Neither would the efforts of a single teacher who is "very successful in teaching reading" qualify as a program. Very large units, such as programs being implemented statewide, are of interest to us and may be nominated for consideration. A program, like a package, is conceived of in a global sense and includes all those things necessary to implement it successfully. They may be aimed at special subgroups at any of these age levels. We are interested in programs funded by local tax sources and private sources, e.g. business, industry, foundations, etc., as well as those funded by states and the federal government.*

In October of 1974 staffs at Patterson Road School and at Integrative Learning Systems were informed by AIR that *your reading program* (is to) *be included in the nationally disseminated catalog of reading programs which we are preparing.* A copy of the program description which was prepared by AIR and which is included on page 137 in the catalog is found on page 8 of this study.

In January, 1974 staff at Integrative Learning Systems completed the final component in the program's replication package and turned to the task of designing the dissemination package. The three components in that package consisting of *A Video Trip to Patterson Road School,* descriptive brochure, and this Dissemination-Replication Study were completed in July, 1975. All of the dissemination components have received extensive field testing in a number of school districts in Los Angeles County, in the Albuquerque, New Mexico area, and in Alaska. Permission to reproduce and distribute to the educational community all of these dissemination materials is being granted to the ERIC Clearing House on Reading and Communication Skills at Urbana, Illinois.

Replication Information

Dialog Group
Patterson Road School

The program design-staff development video programs which were produced from material taped on-site at Patterson Road School are used in both the dissemination and replication elements of the project. That is, the subject matter of the *Video Trip to Patterson Road School* has been excerpted from the same five videotape programs which are used to teach a faculty how to design a Reading Chain for their school in which they employ the same specific teaching strategies as are used at Patterson Road School.

In addition to these five videotape programs, a faculty which chooses to provide a Reading Chain for its boys and girls studies the same ten Formula Phonics videotape programs and teaching manuals which were used to train staff at Patterson Road School. Then after receiving the exact same basic instruction as did the teachers at Patterson Road School, the faculty moves by videotape "on-site" to that school to complete its training. Generally, except in programs with complex bilingual or English as a Second Language components, it is possible to use the tapes and teaching manuals to establish a Reading Chain in a school *without* the need (or cost) for live consultation and staff development.

Program Selection

Before a district's administrators and teachers select any reading program, they should subject that program to a searching inquiry. What has been needed in order to do this is a systematic structure for conducting such an examination. Perhaps the Curriculum Inquiry Center at the University of California at Los Angeles has provided that structure. *Education U.S.A.* in its April 7, 1975 issue quotes Gordon Calwelti, Executive Director of the Association for Supervision and Curriculum Development, as suggesting a series of questions educators should ask in assessing program packets and resources. The questions include:

- Which students were the materials designed for? Is that indicated?
- Do the materials describe the role of the teacher?
- Does the program indicate how the materials can be effectively used?
- What is the value of the objectives being taught?
- Are the objectives clearly stated? What is the student expected to attain?
- Why was the content selected? Is this indicated?
- Do the suggested activities clearly relate to the objectives?
- Have the materials been field tested? With what group of students? Did the program produce the desired effect? Has the content been reviewed for accuracy?
- Are appropriate evaluation procedures or instruments included in the program? Is the evaluation appropriate, i.e., an oral test of oral skills?
- Does the price represent the full cost of the program? Are there consumable materials that must be replaced? Are the materials durable?
- Are special conditions necessary for the use of the materials? Is this indicated?
- Do the materials contain racial, ethnic or sexist bias?

Today, many educators feel that the single most important procedure in choosing a reading-language arts program is conducting an on-site visit to a school where the program may be seen in operation. This need to view a program in action is deemed to be essential, for instance, in cases where criterion referenced tests provide the basis for program effectiveness studies. Because few persons have had the opportunity to visit on-site and then to evaluate reading programs with which they were not previously familiar, standards for this type of evaluation and contrasting were needed.

In 1971 George Weber isolated certain critical factors which he found to be present in his study of four successful reading programs. He published that information in his *Inner-City Children Can Be Taught to Read.*[1] In 1975, the Massachusetts Advisory Council on Education published the results of a study conducted by Educational Research Corporation.[2] This study considered twenty Massachusetts schools chosen to "represent a reasonable cross-section of city schools within the Commonwealth." Borrowing heavily from Weber's work, it evaluated and contrasted each school's program against a total of eleven factors.

The eleven factors used in the Massachusetts study have been selected for use in evaluating and contrasting the Formula Phonics Reading Chain Program at Patterson Road School and programs in other schools. The five point rating scale used in the Massachusetts study has also been retained. Here, the evaluator considers each of the eleven factors and assigns each a rating from "high" to "low." These ratings may then be weighed on a scale from zero to four where:

HIGH = 4 points (major element in program)
TENDING HIGH = 3 points
MEDIUM = 2 points
TENDING LOW = 1 point
LOW = 0 point (element missing or non-effectual)

By using this measure it is possible to evaluate a school's program independently by considering the number of factors rated "high or "tending high" against those rated "medium," "tending low," or "low." It is also possible to contrast programs in two or more schools *quantitatively* by adding the points in each of the columns or *qualitatively* by considering the eleven factors separately. In the Massachusetts study the rating on the eleven factors in four "successful" schools would be 28 and in the three "unsuccessful" schools 7, with the other schools falling somewhere in between.

DIRECTIONS: After your *Video Trip to Patterson Road School* you may use this scale to evaluate the total reading program in terms of the eleven factors listed below. Use a zero (low) to four (high) scale. Later, you may use this same form to evaluate another program with which you are familiar and then contrast the two.

EVALUATION FACTORS	CONTRAST SCALE	
	Patterson Road School	_____ School
1. **LEADERSHIP:** *To what extent does the program have an identified leader and to what degree does that person function as a supervisory force?*	_____	_____
2. **COORDINATION:** *To what degree do the instructional elements of the* **total** *reading program articulate both vertically—from lower to higher grades—and horizontally—within each grade?*	_____	_____
3. **ADDITIONAL READING PERSONNEL:** *To what degree is the regular staff supplemented, or served, by other specially trained personnel?*	_____	_____
4. **ATMOSPHERE:** *To what degree are the specific teaching processes which characterize the total reading program seen to be orderly, purposeful, quiet, and relaxed?*	_____	_____

[1] G. Weber. *Inner-City Children Can Be Taught to Read.* Washington, D.C. Council for Basic Education, 1971.

[2] A. Ellis. *Success and Failure; A Summary of Findings and Recommendations for Improving Elementary Reading in Massachusetts City Schools.* Watertown, Massachusetts. Educational Research Corporation, 1975

EVALUATION FACTORS	CONTRAST SCALE	
	Patterson Road School	_____ School
5. INDIVIDUALIZATION: *To what degree does the total reading program provide for, and adapt to, the varied learning styles, educational and social backgrounds, and identified needs of the students?*	_____	_____
6. EVALUATION: *To what degree does the program provide for the systematic evaluation of student needs and progress and then make this information available to the teaching staff?*	_____	_____
7. HIGH EXPECTATION: *To what degree do teachers hold positive expectations concerning the capabilities of their own students and of students in general?*	_____	_____
8. STRONG EMPHASIS ON READING: *To what degree does reading permeate the fabric of the school's total educational program?*	_____	_____
9. USE OF PHONICS: *To what degree is the use of phonics centered in the total reading and instructional program?*	_____	_____
10. STAFF TRAINING AND EXPERIENCE: *To what degree is the staff's previous classroom experience, pre-service education, post-graduate classwork, and in-service training reflected in program design and implementation?*	_____	_____
11. QUALITY OF TEACHING: *To what degree is teaching excellence seen in classroom management, interaction between teacher and pupils, and in observable learning activitie?*	_____	_____
TOTAL RATING	_____	_____

The processes viewed during the *Video Trip to Patterson Road School,* taken together with the materials which are found in this Dissemination-Replication Study will help the educator deal with the questions found above. After viewing the video trip, for instance one may consider a Reading Chain program both subjectively and objectively. Indeed, one could most profitable take the video trip a second time with a set of the questions in hand. To provide more information concerning the mechanics of the program there is provided Right to Read's description of the program at Patterson Road School, an article by Principal Jerry Coker, and a general description of all Reading Chain programs.

To determine whether a Reading Chain program might be applicable for use with a specific population of students (in terms of ethnicity, language background, cultural differences or isolation, educational deprivation, or social economic status) a list of schools with Reading Chains is included. Administrators of each of these programs are listed so that they can be contacted directly and questioned about any aspect of their program. In the Affordability Study are found the figures and information necessary to determine the cost for a Reading Chain program serving any number of pupils. One may also examine the Learner Verification Studies to determine the effectiveness of Reading Chain programs.

Right to Read Program Description

Patterson Road Elementary School, Orcutt, California
Formula Phonics Reading Chain

Choosing an Interesting Book
Patterson Road School

Program Size and Target Population
The program serves 320 students in grades 2–6. The majority of students are white and come from low- and middle-income homes in the suburbs of a small city near a large military installation.

Year Started
The program began in 1972.

Staff
The program employs 11 of the school's regular teachers. The principal and a reading specialist coordinate and monitor the program. On-site training includes viewing both staff-development and pupil-patterning video tapes.

Major Features
Staggered scheduling allows 2 ungraded Reading Chains of 12 groups each to meet 45 minutes daily. Grouping is not by grade level but by reading comprehension. The reading specialist and classroom teachers teach the Reading Chain groups in a morning and afternoon reading class called a "Dialog Group." Less advanced groups serve 10 to 12 pupils: the more advanced serve 15 to 18. Initially, teachers are assigned groups by lottery and rotate groups every 5 weeks. Pupils move up the chain on teacher recommendation. The program starts with every pupil viewing the same 10 half-hour Formula Phonics video tapes, which teach them a system for decoding. During the Dialog Groups, the oral reader (called the "model") uses the system to decode unfamiliar words. Reinforcement is accomplished in a companion spelling program and in follow-up activities. In every room, wall charts display the formula and basic decoding information. Literature that is read and discussed in Dialog Groups is at least 2 years *above* the group's tested total reading level. No child is ever placed in a group where he will read below his class level. Reading matter—short stories first, then novels and other works—is chosen for its literary worth and interest level. Instruction is designed to move quickly from questions that clarify the reading to discussions involving Socratic dialoging, which teaches critical thinking skills and open-ended questioning at the highest level. Thinking processes and reading skills are strengthened by paper-and-pencil tasks keyed to the reading experience. Pupils move from the Dialog Group to regular classrooms where they read, orally or silently, in content areas and for information and pleasure.

Facilities, Materials, Equipment
Essential items include a video playback unit and television set, a set of video tapes or cassettes, pupil patterning and spelling books, teacher manuals, and wall charts. A wide range of reading matter and reference materials is also desirable.

For Further Information

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Patterson Road School's Formula Phonics Reading Chain

By Jerry Coker, Principal

Dialog Group
Patterson Road School

IN DECEMBER, 1972, PATTERSON Road Elementary School in the Orcutt Union School District, Orcutt, Santa Barbara County, California, became the first school in America to be restructured to accommodate a Formula Phonics Videotape Reading Chain. This was a major undertaking because it involved the restructuring of our school day; the training of staff, myself included, to use a reading-language processing system which was totally different from the basal reading system used previously; the introduction of the new system to *all* of our second through sixth graders; and the introduction of the program to our parents and expanded community. We can say with certainty that the effort was worth it; for now our students are among the best readers and best *readers*—boys and girls in America. Our school is one of the most visited sites in California. And our Formula Phonics Reading Chain has been cited, after a search which studied some 1500 reading programs nation-wide, as constituting one of the most effective reading programs in the land. This paper is written so we may share information about our reading program with other educators.

COMMUNITY: Orcutt is a semi-rural suburb of Santa Maria, California, a city close to the space complex at Vandenberg Air Force Base. Our students are generally majority ethnic (3% minority) and come from upper-lower and lower-middle income homes. The transiency rate at Patterson Road School is very high. We are paired with another school which sends us its educationally handicapped and learning disability group boys and girls during the course of the school year as they are identified. As our program has matured, our parents have become ever more supportive of our efforts.

OUR PROGRAM—STAFF DEVELOPMENT: The specific system which is used in the decoding, questioning, and spelling elements of our program is called Formula Phonics. The reliability and ease of instruction of these elements have made it possible for us to devote the major portion of our instructional time treating with the higher level learning and thinking processes. We call *everything* a teacher teaches a pupil to do with the printed word "language processing." In every Dialog Group this processing of language goes forward in the affective and cognitive domains by way of reading, spelling, writing, listening and speaking. It also goes forward in the several content areas and in the practical and fine arts areas as well.

As the first step in the program, all of our certificated staff were trained in the specific Formula Phonics methodology by reading two teaching manuals, *Formula Phonics*, which treats with decoding and oral language processing, and the *Formula Phonics Spelling Book*, which treats with spelling and written language processing. We then continued our training by watching together and then discussing the video tapes which make up *The Formula Phonics Videotape Reading Program*. We studied those video programs very carefully because we knew that later we were to show ten of them to all of our second through sixth graders. (Today in addition to the twelve video programs which we used in our training there are five new programs which contain segments which were videotaped on-site at Patterson Road School and which are used as a part of our ongoing staff development.) In a series of after school sessions spread over two or three weeks, we finished this element of our training and were ready to set up our Reading Chain.

OUR PROGRAM — READING CHAIN DESIGN: The first step in setting up our Reading Chain consisted of using the ten video programs to fund *every one* of our second through sixth graders with the same body of phonetic decoding and spelling information. Each of these tapes is about 24 minutes long and we found that, as a general rule, students in grades three to six are able to handle one tape per day. This is because students process the information in the video programs even as they watch by working along in their programming book, *The Formula Phonics Reading Book*, and doing the suggested follow-up activities afterwards.

Because second graders and special education youngsters usually required a longer period of time to watch the video programs, they started watching them some time before the others. Students only watch the ten video programs once in their school lives. After the first year only second graders and new enrollees need watch them each September. Of course, each new student who enrolls in our school anytime after September watches the ten programs before being assigned to a Dialog Group.

While our students were watching the video programs in their homerooms, we were busy setting up our Reading Chains. We instituted a staggered day schedule with half our pupils arriving 45 minutes early in the morning and the others remaining 45 minutes later in the afternoon so that our teachers enjoy the luxury of teaching two small Reading Chain groups each day. Each student was assigned to a homogeneous, ungraded group according to consideration of vocabulary and comprehension scores on the C.T.B.S. and our teachers' personal assessments of *total* reading capacity, store of information based on previous reading, and maturity level.

Each of the reading sections is called a Dialog Group and our Reading Chain is made up of a number of groups. In our Chain every child, including second graders, can be assigned to the top group if that is where the faculty believes he would profit the most. However, in placing students in the Reading Chain, great care is taken to see to it that older boys and girls are not placed in groups dominated by those who are younger. Additionally, every five or six weeks every student is evaluated by the staff and those who are ready are placed in higher groups in the Chain.

Just before our Reading Chain was

to go into operation, our teachers drew numbers to determine which group they were to teach in our morning Chain and which group in our afternoon Chain. Thus, in the morning a sixth grade teacher might find herself working with second and third graders, while a second grade teacher might draw a group of gifted fourth, fifth, and sixth graders. Each might find herself with an entirely different group of youngsters in the afternoon. Obviously, we knew that we must learn to treat with every type of reading and language instructional need and procedure which one might find in any school.

This is particularly true when one learns that every five or six weeks the teacher-dialogists rotate groups. On those occasions, every teacher moves down to the next lower group and the teacher with the lowest reading ability group moves up to teach the group at the top of the Chain. Having teachers rotate groups provides that every student will, over a period of one or two years, be exposed to the special teaching skills and literary expertise of every teacher.

Our reading specialist maintains individual and group records for all students in the Reading Chain. Titles of books and other reading sources used in Dialog Groups are recorded along with group reading scores on a cumulative basis. In addition to serving as a resource specialist to staff regarding discussion techniques and language arts activities, she relieves classroom teachers during reading time. We call this "walking through the Chain" and find it to be a most valuable tool for professional growth.

The final organizational technique involves staff discussion sessions. These are especially important during the first two years of the program and even after that time we find they serve a useful purpose. These feedback sessions must be honest, open, and provide positive input for constant program improvement.

OUR READING CHAIN—TEACHING STRATEGIES: Virtually every minute in each 45 minute dialog period is given over to the reading, discussion (dialog), and other processing of worthy literature. Until a child progresses to one of our many top groups where the students are reading and processing such works as *Flowers for Algernon, The Hobbit, Fantastic Voyage,* or *Animal Farm,* his group will always be reading material which is about two years *above* his tested reading level and never *below* his true grade level. This is possible because all of the students in a group have been exposed to the same body of phonemic information and because the teacher works with the group as though it were an individual.

In the Dialog Groups one student and then another is called on to read aloud. Everyone understands that the oral reader is serving as a model to the whole group. The model reads as much or as little as his teacher desires; and at any point during, or immediately after, the teacher questions the entire group concerning any word, sentence, paragraph, or idea the reading material contains. If a model encounters a word he does not know, the teacher writes it on a hand held chalkboard and then leads the group in attacking the word. Final closure on the word, however, is reserved for the model.

To aid in systematizing these very important word attack episodes, each classroom contains a set of four Formula Phonics poster-wall charts. Two of these charts carry basic phonetic information; a third contains the Formula; and the fourth which is called the "Dialog Chart" gives the group a structure for discussion and for writing after decoding episodes. The Formula functions as a systematic retrieval system which students use to retrieve and then apply the phonetic information they received from the ten video programs and have had consistently reinforced in the Dialog Groups and in their homerooms.

At Patterson Road our students attack words only in the natural context of reading for information and pleasure. They develop decoding skills as an outcome of the group process. We observed that during each month in our program students internalized more and more of the decoding system. Because of this our teachers spent less and less time helping groups attack words and more and more time in building vocabulary or in discussing plot, characterization, inference, or ideas.

Another way in which we help our boys and girls learn decoding skills is by way of spelling. The system's spelling program does away with the need for most drill on phonetic skills and at the same time opens up the world of writing for our students. The spelling formula and the decoding formula help our students *utilize* the same body of phonetic information and skills. Just as soon as our youngsters begin to synthesize the spelling system we begin teaching them to process what they read by way of writing. This is another reason why we always have our students read the best written literature possible. We want what they read to serve as a model for what they write.

Because we elected not to use controlled vocabulary material, high interest-low vocabulary stories, or *simplified* abridgements when teaching our youngsters to read, finding reading material did present a problem. During the first year almost all reading in the Dialog Groups was in short stories. We borrowed anthologies from the secondary schools for our more able groups and used upper-elementary material for our younger and less able readers.

After the first year, most of our teachers turned to paperback editions of quality selections for use with the Dialog Groups. Our reading specialist maintains a library of these titles which we buy in sets of 23 copies per title. This number was chosen because while our groups average 15 students each, occasionally the top groups swell to 20 students. Our yearly cost for these titles for all groups in the Chain has averaged about $250.00 and we now have a collection of more than 100 titles.

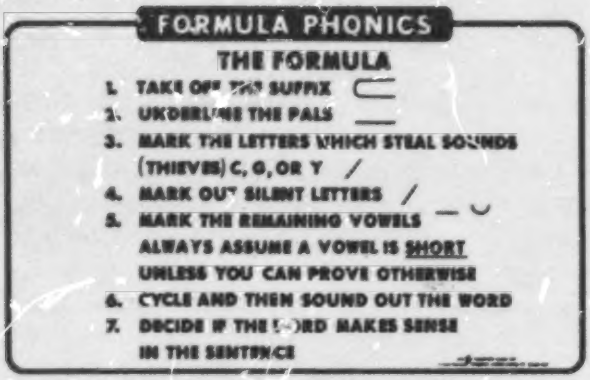
Because Formula Phonics takes care of the mechanics of decoding and spelling and so permits our students to work in serious literature, most of our staff development work during the second and third years has been in the areas of higher language processing and questioning. We believe that while it is important to teach students how to attack words, to spell, and to develop their vocabularies, it is far more important to teach them how to process whatever it is they read.

In our staff development-feedback sessions we have read and discussed such authors as Bloom and Taba. We have used materials developed at the Nebraska Curriculum Development Center at the University of Nebraska and at California's Structure of the Intellect Center. Additionally, staff at Integrative Learning Systems of Glendale, California, who designed our Reading Chain and produces all Formula Phonics materials, has been most helpful in teaching us to handle the three areas of inquiry—basic, maieutic, and Socratic—which we employ in our Dialog Groups and classrooms.

I say "classrooms" because our Formula Phonics Reading Chain Program has had its greatest impact on the day-to-day teaching in the homerooms. We have moved to a point at Patterson Road School where virtually all students read and process content area curriculum in materials written at or above their true grade level. In fact, during the past (1974-1975) school year much of the content area reading in our third through sixth grade classrooms has been in Scholastic Units which we ordered from the California State Supplementary Secondary Book Lists, rather than the elementary lists.

CONCLUSION: Our Formula Phonics Reading Chain at Patterson Road Elementary School has "turned our school around" because it is a program for *every* one of our students and *every* one of our teachers. While the hard data is overwhelming—our third graders in spring, 1974, scoring at the 94%ile—the effect of the program on the total educational process is really more important. Our classrooms are quiet and orderly and happy. Our teachers are teaching and our girls and boys are learning. Our message? "When all of the resources of all of the members of highly trained and motivated faculty are focused on a group of boys and girls, there appears to be no limit as to how far those youngsters may be taught." □

Program Design—
The Reading Chain


FORMULA PHONICS
THE FORMULA
1. TAKE OFF THE SUFFIX
2. UNDERLINE THE PALS
3. MARK THE LETTERS WHICH STEAL SOUNDS
(THIEVES) C, G, OR Y
4. MARK OUT SILENT LETTERS
5. MARK THE REMAINING VOWELS
ALWAYS ASSUME A VOWEL IS SHORT
UNLESS YOU CAN PROVE OTHERWISE
6. CYCLE AND THEN SOUND OUT THE WORD
7. DECIDE IF THE WORD MAKES SENSE
IN THE SENTENCE

Reading Chains usually include all of a school's regular pupils from grades two or three upward as well as most of the special education pupils from those grades. Starting with the most reliable test data available, modified by teacher judgment, the staff rates each pupil in terms of total reading capability and then prepares an ungraded listing of all pupils from the least able reader to the very best. The total number of pupils on this list is divided by the number of teachers to determine the size of each Dialog Group in the Chain.

Grouping is accomplished by placing all pupils into ungraded homogeneous groups based on *total* reading ability. Each group in a Reading Chain is of about equal size and teachers pull numbers to discover which group they are to first teach. During the same period in which pupils are being grouped, teachers and administrators are trained in Formula Phonics methodology by watching the 16 video programs and by reading the teaching manuals, *FORMULA PHONICS* and *FORMULA PHONICS SPELLING BOOK*. Following staff development each teacher programs his own class (*not* his Dialog Group in the Reading Chain) by means of the video tapes and follow-up activities. Normally, older pupils see one program a day so that after ten school days they are ready to report to their Dialog Groups. Second graders and educationally different pupils at other grade levels usually watch the video programs according to procedures outlined in the *FORMULA PHONICS ENGLISH AS A SECOND LANGUAGE* teaching manual. Because these procedures take more time, these students start to watch the tapes some days earlier than the other students.

The first few days in the Dialog Groups are spent in familiarizing pupils with the four wall charts and in completing the live programming activities found in their *FORMULA PHONICS READING BOOKS*. Because the live patterning goes forward *after* pupils are regrouped, teachers can take special care with groups of poorer readers. No group, however, should stay with these activities for a period longer than fifteen school days. As the live patterning is completed, each teacher moves his group into first class reading material at the group's oral comprehension level.

Pupils who move into a school after Dialog Chain groups have been formed watch the tapes while the remaining pupils are reading and processing worthy literature with their teacher-dialogists, and after viewing the final program are assigned to the proper Dialog Groups.

The single most important element in assuring the success of a Reading Chain is that every five or six weeks the groups rotate teachers. This is accomplished by having each teacher take the next lower group in the Chain and the teacher who had the lowest reading ability group moving to the top. Every five weeks, in addition to changing groups, teachers regroup those pupils who have made exceptional growth in total reading ability. Mobility in the program is always upward and is based on reading and writing ability, emotional maturity, and the nature of previous reading experiences.

During the first five week dialog period pupils who are discovered to be misplaced may be traded between groups. After that, pupils who show great growth in reading ability serve as models for their groups until the next five week regrouping period.

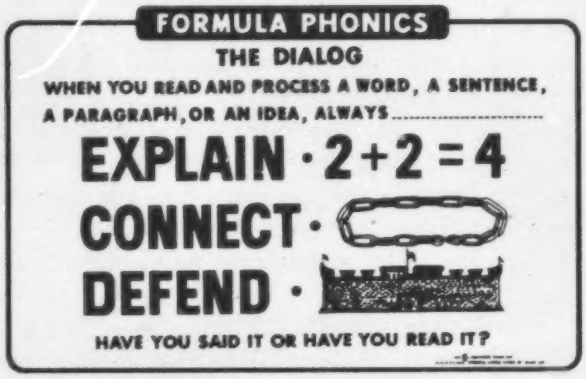
At the beginning of the first five-week cycle pupils start working in the *FORMULA PHONICS SPELLING BOOK.* Because they are teaching writing and spelling to their Dialog Groups, teachers are able to close the language arts loop—reading, speaking, listening, writing, and spelling—by focusing a part of their discussion on these latter two skills. Therefore, what is read in the Dialog Group may also serve as a model for writing, *i.e. Notice how this author* **connects** *these two thoughts in just one sentence. How do these punctuation marks help* **explain** *Bob's predicament? Where in this paragraph do we find a* **defense** *for the opening statement? It looks funny, but why must this word be spelled this way?* This process assures that every five weeks every pupil in a Reading Chain school is exposed to a different perspective as he dialogs and a different style as he learns to write. These skills, of course, carry over into the rest of the school day as pupils work in their regular classes.

In cases where Dialog Groups exceed the ideal range of 14 to 20 elementary pupils, numbers of different strategies may be used to drop class size. Some schools employ a Double Chain with half the pupils in Dialog Groups while the remainder are on the playground in supervised activities. Others have half the pupils engaged in an individualized academic program while the other half are in Dialog Groups. An extended day program is most often used to produce a Double Chain and so lower group size. Teachers in schools with Double Chains draw for groups twice and may dialog with two very different groups each day. Under no circumstance should teachers try to serve two groups in the same room with one group dialoging and the second group involved in some other activity.

Most Reading Chain schools train substitute teachers in the method and also arrange for interested parents to watch the tapes. The more successful programs also arrange to have each teacher's Dialog Group covered once each five weeks so that each teacher has an opportunity to "walk through" each of the other Dialog Groups. This practice helps teachers make better decisions concerning the regrouping of pupils while providing a sharing of dialoging techniques. Every successful program has an involved principal who has a thorough understanding of the Formula Phonics process and supports the efforts of his teachers. Although the principal may delegate the coordination of his Formula Phonics Reading Chain Program, he should never delegate its administration.

Elements in the most successful programs:

- include *all* pupils and *all* teachers from grades two or three upward in the Chain
- include rotation of groups every five or six weeks
- include the spelling-writing component
- include the opportunity for teachers to visit each other's groups
- include regularly scheduled feedback sessions where teachers and administrators meet to discuss the program


FORMULA PHONICS
THE DIALOG
WHEN YOU READ AND PROCESS A WORD, A SENTENCE, A PARAGRAPH, OR AN IDEA, ALWAYS.....
EXPLAIN · 2+2 = 4
CONNECT ·
DEFEND ·
HAVE YOU SAID IT OR HAVE YOU READ IT?

Reading Chain Schools

There are numbers of schools across the United States using specific Formula Phonics methodology in their classrooms. Listed below, however, are those schools which have Formula Phonics Reading Chain Programs most nearly approximating the program design pioneered at Patterson Road Elementary School and described on pages eight through twelve of this study.

• ALASKA

Nome Agency, Bureau of Indian Affairs

Contacts: Richard Francis, Education Program Administrator / or Mark Hanson, Education Specialist / Bureau of Indian Affairs / Nome Agency Office / P.O. Box 1108 Attn. Education / Nome, Alaska 99762 / Phone: (907) 443-2284

Schools

Brevig Mission
Diomede
Elim
Gambell
Golovin
Kiana
Kotzebue
St. Michael
Savoonga
Shaktoolik
Stebbins
Unalakleet

Bethel Agency, Bureau of Indian Affairs

Contacts: S. William Benton, Education Program Administrator / or / Calvin Lundy, Education Specialist / Bureau of Indian Affairs / Bethel Agency Office / P.O. Box 347 / Bethel, Alaska 99559 / Phone: (907) 543-2745

Schools

Akiachuk
Eek
Kasigluk
Kipnuk
Kwethluk
Kwigillingok
Napakiak
Napaskiak
Nunapitchuk
Quinhagak
Tuntutuliak

Nome Public Schools

Contact: Susan Hanson, Reading Resource Teacher / Nome Public Schools / Box 131 / Nome, Alaska 99762

School

Nome Public School

Alaska State-Operated School System, Southwest Region

Contact: Janna Treisman, Title I Coordinator / Southwest Region Alaska State Operated School System / Box 28 / Dillingham, Alaska 99576 / Phone: (907) 842-3614

Schools

Manokotak School
New Stuyahok School
Togiak School

Reading Chains in these Alaskan schools serve pupils who speak English and/or Aleut, Athabascan, and a number of Eskimo dialects. Funding at Nome Agency Bureau of Indian Affairs and Alaska State-Operated Schools was by Title I of the E.S.E.A. Funding for Bethel Agency Bureau of Indian Affairs Schools is by regular Bureau of Indian Affairs funds. All B.I.A. programs have the bilingual-bicultural component.

• NEW MEXICO

San Juan Day School (Tewa Bilingual Project)

Contacts: David Torres, Principal / or / Arthur Ortiz, Project Director / San Juan Day School / San Juan Pueblo, New Mexico 87566 / Phone: (505) 852-4184

This Tewa Language Bilingual Project serves northern Pueblo native Americans and was funded under Title VII of E.S.E.A.

Tularosa Municipal Schools

School

Bent-Mescalero School / Mescalero, New Mexico 88340 / Rita Gallagher, Principal / Phone: (505) 671-4470

This program serves Mescalero Apache children and is funded by Title I E.S.E.A.

• NORTH DAKOTA

Mandaree School District Number 36

Contact: Sister Patricia Carroll, Elementary Principal / Mandaree School District No. 36 / Mandaree, North Dakota 58757 / Phone (701) 675-2258

School

Mandaree Public School

This Reading Chain was funded under Title I of E.S.E.A. and serves Arikara, Hidatsa, and Mandan boys and girls.

• SOUTH DAKOTA

Pine Ridge United School Board Foundation

Schools

Loneman Day School / Oglala, South Dakota 57764 / Jeanette C. Murphy, Title I Facilitator / Phone: (605) 867-5633

Porcupine Day School / Porcupine, South Dakota 57772 / Fred Gause, Title I Coordinator / Phone: (605) 867-5337

These Reading Chains are funded under Title I of E.S.E.A. and serve Oglala Sioux girls and boys.

• CALIFORNIA

Atascadero

Contact: Dr. Theron P. McCarty, Assistant Superintendant / Atascadero Unified School District / 6800 Lewis Avenue / Atascadero, CA 93422 / Phone: (805) 466-0393

Schools

Lewis Avenue School / 6495 Lewis Avenue / Atascadero, CA 93422 / Charles Wilbur, Principal / Phone: (805) 466-0393

Monterey Road School / 3355 Monterey Road / Atascadero, CA 93422 / Dan Ross, Principal / Phone: (805) 466-0393

Santa Margarita School / P.O. Box X / Santa Margarita, CA 93453 / John Pomeroy, Principal / Phone: (805) 438-5633

Santa Rosa School / 9205 Santa Rosa Road / Atascadero, CA 93422 / Mrs. A. Kris Dermott, Principal / Phone: (805) 466-0393

Atascadero Unified School District has the first district-wide Formula Phonics Reading Chain Program in California. Funding: district.

Calipatria

Contact: Virgil Walker, Director of Reading / Calipatria High School / P.O. Bin "G" / Calipatria, CA 92233 / Phone: (714) 348-2254

Schools

Calipatria Senior High School / P.O. Bin "G" / Calipatria, CA 92233 / Myoshi Ikeda, Principal / Phone: (714) 348-2254

Fremont Intermediate School / P.O. Bin "G" / Calipatria, CA 92233 / Clayton Erickson, Principal / Phone: (714) 348-2842

Niland Intermediate School / P.O. Box 428 / Niland, CA 92257 / James Hughes, Principal / Phone: (714) 348-0636

Calipatria Senior High School is the first high school in America to utilize a Reading Chain. Funding: district, with one set of tapes serving the three schools.

Carpinteria

Contact: Mrs. Phyllis Clayton, Formula Phonics Reading Coordinator / 1480 North Linden Avenue / Carpinteria, CA 93012 / Phone: (805) 684-4141

Schools

Aliso School / 4545 Carpinteria Avenue / Carpinteria, CA 93013 / Josephine Costantini, Principal / Phone: (805) 684-4539

Canalino School / 1480 North Linden Avenue / Carpinteria, CA 93013 / Philip Dunn, Principal / Phone: (805) 684-4141

Fresno

Contact: Mrs. Gloria Anderson / Supervising Reading Coordinator / Fresno Unified School District / 3132 East Fairmont / Fresno, CA 93726 / Phone: (209) 224-4350

School

Jane Adams School / 2117 West McKinley / Fresno, CA 93728 / Jack Smith, Principal / Phone (209) 268-1932 / 40% Spanish surname / 15% Black / Funding: district

This program is a spin-off from the district's secondary B.L.O.C. Reading-Language Arts Program which employs specific Formula Phonics methodology with target pupils in four junior and one senior high school. The Adams School program was implemented with video tapes borrowed from one of the junior high schools.

Hacienda La Puente

Contact: Robert Schilling, Administrator, Instructional Services / Hacienda La Puente Unified School District / 15959 East Gale Avenue / La Puente, CA 91745 / Phone: (213) 333-2201

Schools

Dibble School / 1600 Pontenova Avenue / Hacienda Heights, CA 91745 / Russell Murray, Principal / Phone (213) 333-2201 / 44.20% Spanish surnamed / Funding: E.D.Y.

Fairgrove School / 1110 Fickewirth Avenue / La Puente, CA 91744 / William Snyder, Principal / Phone (213) 333-2201 / 39.80% Spanish surnamed / Funding: Title I

Grazide School / 2850 Leopold Avenue / Hacienda Heights, CA 91745 / Albert Campbell, Principal / Phone: (213) 333-2201 / 6.30% Spanish surnamed / Funding: district

Kwis School / 1925 South Kwis / Hacienda Heights, CA 91745 / Harold Brunsdon, Principal / Phone (213) 333-2201 / 27.10% Spanish surnamed / Funding: district

Los Robles School / 1530 Ridley / Hacienda Heights, CA 91745 / Robert Saxton, Principal / Phone: (213) 333-2201 / 13.30% Spanish surnamed / Funding: district

Palm School / 14740 East Palm Avenue / Hacienda Heights, CA 91745 / Robert Docken, Principal / Phone: (213) 333-2201 / 23.70% Spanish surnamed / Funding: district

Wedgeworth School / 16949 Wedgeworth / Hacienda Heights, CA 91745 / Mrs. June Jones, Principal / Phone: (213) 333-2201 / 12.1% Spanish surnamed / 6.70% Oriental / Funding: district

Some of the schools in this large district employ the specific reading methodology used at Patterson Road School but do not use a Reading Chain design.

• CALIFORNIA (Continued)

Montebello

Contact: Nicholas Monsour, Principal and Eileen Babcock, Coordinator of Instruction / Montebello Intermediate School / 1600 Whittier Blvd. / Montebello, CA 90640 / Phone: (213) 721-5111

School

Montebello Intermediate School / (address above) / 80% Spanish surnamed / Funding: Title I and district

This is a grade 5–8 program in a flexible space school setting which also has an articulated E.S.L. component.

Orcutt

PATTERSON ROAD SCHOOL (MODEL SCHOOL)
400 EAST PATTERSON ROAD
ORCUTT, CA 93454

JERRY COKER, PRINCIPAL
PHONE: (805) 937-4931

Redlands

Contact: Robert Campbell, Assistant Superintendent of Instruction / Box 1008 / Redlands, CA 92373 / Phone: (714) 793-2301

School

Mentone School / 1320 Crafton Avenue / Mentone, CA 92359 / Orval Nease, Principal / Phone: (714) 794-1186

Staff at Mentone School use the video tapes and books to train parents to teach and reinforce Formula Phonics reading-language processing skills with their own children at home.

Santa Barbara

Contact: John De La Rosa, Assistant Superintendent, Elementary Education / Santa Barbara School District / 720 Santa Barbara Street / Santa Barbara, CA 93101 / Phone: (805) 963-4331

Schools

Harding School / 1625 Robbins Street / Santa Barbara, CA 93101 / Julian Tippit, Principal / Phone: (805) 963-4331

Roosevelt School / 1690 Laguna Street / Santa Barbara, CA 93101 / Don McMahon, Principal / Phone: (805) 963-4331

Santa Barbara Schools are integrated by way of bussing pupils. Funding: Title I and district

Affordability Study

Elementary Reading Chain Language Processing System

Information in the Affordability Study was prepared for use with the Patterson Road Elementary School Formula Phonics Reading Chain Dissemination-Replication Project. In this study no funds are budgeted for additional staff or existing salaries because elementary Reading Chain programs utilize each school's existing staff and go forward during the regular school day. Staff development materials and poster wall charts are computed on an average pupil teacher ratio of twenty-five to one.

Two or even three small schools may successfully share a single set of video cassettes if transiency rates in each of them are low and if each has equal and easy access to the cassettes and playback equipment. Hence, the cost per child figure does not change when the same set of cassettes serves one, two, or three schools.

TABLE I

FIRST YEAR COSTS

Pupils Served	Total Cost	Cost Per Child
100	3,096.60	30.97
200	3,392.60	16.96
300	3,689.60	12.30
400	3,986.40	9.97
500	4,283.00	8.57
600	4,579.60	7.63
700	4,876.20	6.97
800	5,172.80	6.46
900	5,469.40	6.08
1000	5,766.00	5.77

TABLE I Shows first year expenses for all Formula Phonics Reading Chain program design, staff development, and pupil materials (16 video cassette programs, teaching manuals, poster wall charts, and pupil decoding and spelling books) needed to establish a Reading Chain in programs serving 100 through 1000 students. It can be seen that the cost per child drops dramatically as the number of boys and girls in the target population increases.

TABLE II

YEARLY MAINTENANCE COSTS

Total Pupils in Program	Total New Pupils Est. 20% New 2nd Graders Est. 15% Move-Ins	Total Cost
100	35	80.50
200	70	161.00
300	105	241.50
400	140	322.00
500	175	402.50
600	210	483.00
700	245	563.50
800	280	644.00
900	315	724.50
1000	350	805.00

TABLE II shows the yearly cost to add 35% new pupils to a Reading Chain during the second through fifth years. The cost to place each new pupil in the program after the first year is $2.30. While pupils remain in the Reading Chain during their entire school life, the program requires no additional materials in successive years except high level curricular and reading matter which may be ordered from a school's ongoing instructional materials budget.

TABLE III

TOTAL COSTS OVER A FIVE-YEAR PERIOD

Pupils Served Per Year	Total* Pupils Served In Five Years	Five-Year Total Cost	Average Cost Per Year	Five-Year Cost Per Child
100	240	3,418.60	683.72	14.24
200	480	4,036.60	807.32	8.41
300	720	4,655.80	931.16	6.47
400	880	5,090.40	1,018.08	5.78
500	1200	5,893.00	1,178.60	4.91
600	1440	6,511.60	1,302.32	4.52
700	1680	7,130.20	1,426.04	4.24
800	1920	7,748.80	1,549.76	4.04
900	2160	8,367.40	1,673.48	3.87
1000	2400	8,986.00	1,797.20	3.74

*Est. 35% new pupils (20% new regular pupils and 15% transiency) in each of last four years

TABLE III shows program costs spread over a five-year period. Column Two shows the total number of pupils the Reading Chain will serve if it accepts 20% first or second grade pupils to replace graduates and the school has a 15% transiency rate.

YOU MAY USE THIS COST SHEET TO DETERMINE THE COST OF REPLICATING A PATTERSON ROAD-TYPE FORMULA PHONICS VIDEOTAPE READING CHAIN PROGRAM IN YOUR SCHOOL OR SCHOOL DISTRICT.

Program For: _____

Grades: _____ **No. Teachers** _____ **No. Pupils** _____

***PLAYBACK EQUIPMENT** at Panasonic *list* price (3/75)

NV 2110M 3/4 U Cassette Player	1350.00
NV 2120 3/4 U Cassette Play-Record	1643.00
NV 2125 e/4 U Cassette Play-Record VHF/UHF Tune	1850.00
CT 911V 19" Color Monitor (use with NV 2120)	798.00
19" Color TV	493.95
25" Color TV	599.95

*Include *only* if school does not have playback equipment

Playback Unit _____ @ _____

Viewing Unit _____ @ _____

TOTAL EQUIPMENT $_____

PERMANENT MATERIALS

Videotape Program—cassette _____ @ 2800.00 = _____
or
Videotape Program—reel _____ @ 2645.00 = _____

Teaching Manuals

Reading _____ @ 5.75 = _____

Spelling _____ @ 5.95 = _____

E.S.L. _____ @ 8.95 = _____

Poster Wall Charts _____ @ 4.95 = _____

TOTAL PERMANENT MATERIALS $_____

CONSUMABLE MATERIALS (Pupil)

Reading Workbooks _____ @ .95 = _____

Spelling Workbooks _____ @ 1.35 = _____

TOTAL CONSUMABLE MATERIALS $_____

TOTAL PROGRAM $_____

Total Cost $ _____ **Number of Pupils** _____ **= 1st Year Cost Per Pupil of $** _____

Total 2nd year cost $_____
Total 3rd year cost $_____
Total 4th year cost $_____
Total 5th year cost $_____

The only cost in succeeding years of the program is the replacement of consumable materials for *new* pupils entering the program, e.g. Grade 2 or move-ins.

All Sales Subject to Federal, State, and Local Taxes If Applicable. F.O.B. Shipping Point

Ordering Guide

Videotapes
The Level II videotapes are used with programs serving early childhood through upper elementary students. The Level III videotapes are used where junior high school programs serve substantial numbers of eighth and ninth graders and with high school students and adults.

Teaching Manuals
The same teaching manuals are used in both Level II and Level III programs. Every teacher who participates in a program will need desk copies of *FORMULA PHONICS* and *FORMULA PHONICS SPELLING BOOK.* Teachers in E.S.L. and bilingual-bicultural programs will need, in addition to the two manuals listed above, copies of *FORMULA PHONICS ENGLISH AS A SECOND LANGUAGE PROGRAM.* The E.S.L. manual may also be used in clinical settings; with such special education students as the educable mentally retarded, learning disability group, and educationally handicapped, and with the very youngest students in a Level II program.

Student Workbooks
The same workbooks are used in both Level II and Level III programs. Every student will need a copy of the two consumable workbooks. *FORMULA PHONICS READING BOOK* and *FORMULA PHONICS SPELLING WORKBOOK.*

Classroom Supplies
One set of wall charts is mounted in each classroom in a school using the Level II program. With Level III programs, one set of wall charts is mounted in each classroom or teaching station where significant numbers of target students attend class. *Pals and Rules* pamphlets may be given to students or to their parents.

Consultation
Integrative Learning Systems maintains a network of Educational Consultants who are available to treat in the areas of staff development—including oral language development programs, content area reading; articulated language arts programs; spelling; dialog and questioning techniques; program design; and program critiquing. Consultation is available for elementary, secondary, or adult level programs at the school or district level and for specialized literacy programs in institutions or communities.

Learner Verification Study

Integrative Learning Systems has obtained a considerable body of data which validates the effectiveness of the Formula Phonics *system.* The design in this Learner Verification Study is to provide learner verification data when the system is specifically employed in a program with a Reading Chain design. Therefore, current data is presented not only from Patterson Road School but from as many other of the Reading Chain program schools as have shared data with us.

The reader will note the wide variety of testing instruments and testing procedures used in the Reading Chain schools. Integrative Learning Systems has never dictated that one testing instrument over another be used to measure achievement in Formula Phonics programs. We have suggested, however, that test instruments with wide ranges or expanded norms be employed since students tend to "run off the top" of instruments which test in a narrow range. Secondary schools, for instance, are urged to use the Nelson-Denny Reading Test rather than the Nelson; and elementary schools where the CTBS is used are urged to choose Forms S and T.

The test results shown beyond reflect exactly the information submitted from the schools. Whenever similar data is received from different schools, the effort will be made to display it in the same way so that it may be easily contrasted.

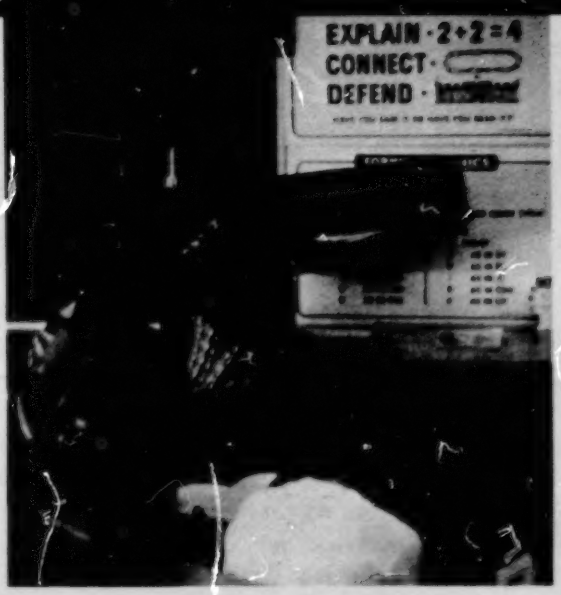
Educators who wish to receive additional learner verification materials as they become available should contact:

Dissemination Unit
Integrative Learning Systems, Inc.
326 West Chevy Chase Drive, Number 11
Glendale, California 91204
Phone (213) 243-2675

Learner Verification Study
Patterson Road School

Formula Phonics Reading Chain
Grades Two Through Six

Date of Study—July, 1975



Word Attack Episode
Patterson Road School

Background

When the Formula Phonics Reading Chain was initiated at Patterson Road Elementary School, original evaluation design called for extensive testing with the *Bond, Balow, Hoyt Reading Test.* Supplemental testing at grades two and three with the *Cooperative Primary Reading Test* and in the fourth through sixth grades with the *Comprehensive Test of Basic Skills (C.T.B.S.)* was also planned. In May, 1974 after the project had been underway for a year and a half, it was determined that the prime testing instrument, the *Bond, Balow, Hoyt Reading Test,* and one of the supplemental instruments, the *Cooperative Primary,* were of decreasing value in testing the boys and girls from the school's Reading Chain Dialog Groups.

A problem with the *Bond, Balow, Hoyt Reading Test* was that at every level the norms were too narrow. Because test ceilings were too low, substantial numbers of students were not adequately evaluated. Teachers at Patterson Road School (and in other Reading Chain schools as well) reported that the *Cooperative Primary Reading Test* was too heavily weighted with items which did not measure how well a child was able to actually read and otherwise process the printed word. Hence, even though the California Assessment Program "Report on the Second and Third Grade Reading Tests, Spring 1974" reported Patterson Road School's scores on state norms, "at the 70%ile for second graders and at the 94%ile for third graders," staff at the school still felt that another instrument for testing their primary students was needed.

After discussion with staff from the McGraw-Hill Test Bureau, it was decided that all subsequent testing to evaluate the effect of the Formula Phonics system on the Patterson Road students would be with the *Comprehensive Test of Basic Skills, Form S.** Testing with that instrument has shown that its expanded norms are able to accommodate most of the school's students. (The current study does show, however, 103 incidences where a fifth or sixth grader scored a top of the scale 11.9 on one or more of the instrument's eight scales.) Another reason for choosing the *C.T.B.S.* was that it is possible to use it to assess skills in Language, Mathematics, Reference Skills, Science, and Social Studies. This type of broad spectrum assessment was necessary for testing a primary program objective which stated: "As the program matures and reading scores improve, there will be similar growth in all of the content areas."

At each testing period the McGraw-Hill Test Bureau provides test scoring services and then produces displays for each class and for each individual student. Further, an analysis of each student's success or failure on the separate test items in the Reading Scales is available to provide individual profiles which are used both diagnostically and prescriptively. All of the data in this study has been taken from the *C.T.B.S.* print-outs prepared for Patterson Road School by the McGraw-Hill Test Bureau.

*Questions concerning the *Comprehensive Test of Basic Skills, Form S* should be addressed to: Dr. William Kline / Director, Test Development / C.T.B. / McGraw-Hill / Del Monte Research Park / Monterey, CA 93940

The Study

The purpose of this study is to permit the reader to evaluate the effect which placement in the Formula Phonics Reading Chain has had on students at Patterson Road School in terms of their scores on a standardized reading and achievement test. With a single exception, every child for whom there are both September, 1974 pre test reading scores and May, 1975 post test reading scores is included in this study. The exception is the school's 15 identified Educationally Handicapped boys and girls. Their scores are treated separately in Table XII for study by those involved in Special Education.

So that one can have a picture of the entire target population at the time of the post test, the mean scores found in the Testing Service print-outs are displayed. These mean scores are for 100 percent of the sample who were post tested and *do* include both the 15 Educationally Handicapped and those students for whom there are no pre tests. Fourth, fifth, and sixth graders were also tested with the *Short Form Test of Academic Aptitude, Levels 2 or 3,* in May, 1975. Those Language, Non-Language, and Total I.Q. scores have been made a part of this study.

Because grade equivalent scores are used almost universally in reporting elementary test data, and so may provide a basis for contrasting one group against a second or another school against Patterson Road, they are used throughout this study. (Here a score of 5.7 would show a level of achievement expected of a typical student who had been in the fifth grade for seven months.) Five factors, pre and post Total Reading, Total Language, Total Mathematics and Total Battery, are considered in the second grade study. In grades three through six, twelve factors, pre and post Vocabulary, Comprehension, and Total Reading, as well as Total Language, Total Mathematics, Total Battery, Reference Skills, Science Skills, and Social Studies Skills, are considered. There are scales which contrast the achievement of girls and boys as well as charts showing a distribution of grade equivalent scores for every student.

Table I provides a summation of all of the pre and post test data which is presented in the tables which accompany this study. It is placed in the body of this narration for easy accessibility. The remaining tables, numbers II through XIII, may be found following the narration.

Information for three grades covering the calendar year from May, 1974 until May, 1975 is also available. Following are Total Reading scores from the *C.T.B.S.* for three groups. Scores for Group B show the impact which seventeen new fifth graders had on that class when it was pre-tested for the current study in September, 1975 (see Fifth Grade Study, beyond).

	MAY, 1974			SEPTEMBER, 1974			MAY, 1975			
	Grade Level	Grade Norm	Total Rdg.	Grade Level	Grade Norm	Total Rdg.	Grade Level	Grade Norm	Total Rdg.	Total Improv.
GROUP A	3	3.8	4.4	4	4.1	4.4	4	4.8	6.3	+1.9
GROUP B	4	4.8	5.1	5	5.1	4.7	5	5.8	7.5	+2.4
GROUP C	5	5.8	6.4	6	6.1	7.0	6	6.8	8.8	+2.4

Second Grade Study

Tables II and III treat with the school's second grade population. These pupils had been in the program eight school months when they were tested in May, 1975. None of these children are seen in the dissemination television production, *A Video Trip to Patterson Road School.*

These second graders were rather accomplished readers when they formally entered the program in September, 1974. Principal Jerry Coker attributes their high entering score for Total Reading to his school's competent early childhood teachers and to the fact that in kindergarten and first grade the youngsters are exposed to a considerable body of Formula Phonics information. Mean post test reading score for the 40 students in this study was 3.4. This is six months above their grade norm of 2.8. These same boys and girls scored seven months above grade norm in Total Language and three months above in Total Mathematics.

Pre Test 9/74 C.T.B.S. Form S (Voc., Comp., Total Rdg.)
Post Test 5/75 C.T.B.S. Form S (Total Battery)
I.Q. Data 5/75 Short Form Test of Academic Aptitude

Date of Study: 7/75

Table I

Learner Verification Study—Summary Sheet

Patterson Road Elementary School

GRADE 2

	N =	Grade Norm	Total Reading	Total Language	Total Mathematics	Total Battery	Total Reading Q1	Total Reading Q2	Total Reading Q3
Pre Test	40	2.1	2.5	N.A.	N.A.	N.A.	1.9	2.3	3.2
Post Test	**4[illegible]**	**2.8**	**3.[illegible]**	**3.5**	**3.1**	**3.2**	**2.8**	**3.7**	**4.1**
Difference			+0.9	—	—	—	+0.9	+1.4	+0.9

	N =	I.Q. Lang.	I.Q. Non-Lang.	I.Q. Total	Grade Norm	Rdg. Voc.	Rdg. Comp.	Total Rdg.	Total Lang.	Total Math	Ref. Skills	Science	Soc. Study	Total Rdg. Q1	Total Rdg. Q2	Total Rdg. Q3
GRADE 3 PRE TEST	49	N.A.	N.A.	N.A.	3.1	3.2	3.0	3.1	N.A.	N.A.	N.A.	N.A.	N.A.	2.0	3.0	[illegible]
GRADE 3 POST TEST	**49**	**N.A.**	**N.A.**	**N.A.**	**3.8**	**5.0**	**5.9**	**5.3**	**4.8**	**4.6**	**4.7**	**4.8**	**4.9**	**4.1**	**4.8**	**6.[illegible]**
GRADE 3 DIFFERENCE	–	N.A.	N.A.	N.A.	—	+1.8	+2.9	+2.2	—	—	—	—	—	+2.1	+1.8	+2.[illegible]

	N =	I.Q. Lang.	I.Q. Non-Lang.	I.Q. Total	Grade Norm	Rdg. Voc.	Rdg. Comp.	Total Rdg.	Total Lang.	Total Math	Ref. Skills	Science	Soc. Study	Total Rdg. Q1	Total Rdg. Q2	Total Rdg. Q3
GRADE 4 PRE TEST	53	—	—	—	4.1	4.2	4.8	4.4	N.A.	N.A.	N.A.	N.A.	N.A.	3.4	3.8	5.1
GRADE 4 POST TEST	**53**	**106**	**107**	**107**	**4.8**	**5.7**	**7.0**	**6.3**	**5.5**	**5.0**	**5.9**	**6.2**	**6.4**	**4.8**	**6.3**	**7.8**
GRADE 4 DIFFERENCE	–	—	—	—	—	+1.5	+2.2	+1.9	—	—	—	—	—	+1.4	+2.5	+2.7

	N =	I.Q. Lang.	I.Q. Non-Lang.	I.Q. Total	Grade Norm	Rdg. Voc.	Rdg. Comp.	Total Rdg.	Total Lang.	Total Math	Ref. Skills	Science	Soc. Study	Total Rdg. Q1	Total Rdg. Q2	Total Rdg. Q3
GRADE 5 PRE TEST	71	—	—	—	5.1	4.9	4.5	4.7	N.A.	N.A.	N.A.	N.A.	N.A.	3.4	4.3	5.7
GRADE 5 POST TEST	**71**	**105**	**108**	**107**	**5.8**	**7.3**	**7.7**	**7.5**	**6.9**	**6.2**	**7.7**	**7.8**	**7.7**	**5.9**	**7.2**	**8.7**
GRADE 5 DIFFERENCE	–	—	—	—	—	+2.4	+3.2	+2.8	—	—	—	—	—	+2.5	+2.9	+3.0

	N =	I.Q. Lang.	I.Q. Non-Lang.	I.Q. Total	Grade Norm	Rdg. Voc.	Rdg. Comp.	Total Rdg.	Total Lang.	Total Math	Ref. Skills	Science	Soc. Study	Total Rdg. Q1	Total Rdg. Q2	Total Rdg. Q3
GRADE 6 PRE TEST	58	—	—	—	6.1	6.9	7.0	7.0	N.A.	N.A.	N.A.	N.A.	N.A.	4.7	6.3	9.6
GRADE 6 POST TEST	**58**	**104**	**106**	**106**	**6.8**	**8.3**	**9.1**	**8.8**	**7.4**	**7.3**	**9.2**	**8.3**	**8.9**	**5.5**	**8.7**	**11.1**
GRADE 6 DIFFERENCE	–	—	—	—	—	+1.4	+2.1	+1.8	—	—	—	—	—	+1.8	+2.4	+1.5

Third Grade Study

Tables IV and V treat with the school's third graders. When tested in May, 1975 these students had been in the program two years. During the *Video Trip to Patterson Road School* many of these students are seen as second graders reading *Misty of Chincoteague* and *Pippi Longstocking.*

After two years in the program, mean test scores in the content areas of Language, Mathematics, Reference Skills, Science, and Social Studies are seen to be about a year above the group's grade norm of 3.8. Because these content area tests are designed to measure available information, knowledge, and skills which are generally learned vicariously by way of reading and language processing, they should be considered as important an index of "learner verification" as are the scores in reading.

Fourth Grade Study

Tables VI and VII treat with the school's fourth graders. When tested in May, 1975 these fourth graders had been in the program for two and a half years. During the *Video Trip to Patterson Road School* certain of these youngsters are seen as third graders reading in *The Little Broomstick, Pippi Longstocking,* and *Homer Price.*

The data for this grade finds the boys and girls achieving at about the same levels in both reading and in the content area skills. As may be observed with every grade and class in this Learner Verification Study, Reading Comprehension scores for fourth graders are significantly higher than are scores in Reading Vocabulary. This phenomenon is not exclusive to Patterson Road School, in virtually every set of data generated by either elementary Reading Chains or secondary Formula Phonics programs, Reading Comprehension scores have been higher than those for Reading Vocabulary.

In studying the distribution of scores in Table VII, it is seen that just as with the third graders all second, third, and fourth quartile post test scores in Vocabulary, Comprehension, and Total Reading are at or above grade norms. This data becomes even more significant when it is seen that only five of the 53 fourth grade students scored in Total Reading more than one year below the 4.8 grade norm. The Language, Mathematics, Reference Skills, Science, and Social Studies scores demonstrate the effect on academic achievement in a school where virtually every student is able to read and process content area material which is written at or above his true grade level.

Fifth Grade Study

Tables VIII and IX treat with the school's fifth graders. When tested in May, 1975 about 76 percent of these fifth graders had been in the program for two and a half years, with about 24 percent of these fifth graders having only one year in the program. During the *Video Trip to Patterson Road School* certain of these youngsters are seen working in *The Little Broomstick, Animal Farm, Flowers for Algernon, The Hobbit,* and *Homer Price.*

These fifth grade scores will be of particular interest to educators who work with highly transient student populations. During the summer of 1974 seventeen fifth graders moved into the Patterson Road attendance area. In September a teacher was added to the staff and a third, fifth grade class was established. During the first weeks of September the seventeen new fifth graders, along with all of the second graders and newcomers in other grades, were patterned with the video tapes and then placed in appropriate Dialog Groups in the Reading Chain.

The seventeen new students had the effect of depressing the three reading pre test scores to points below the grade norm of 5.1. How well the Formula Phonics Reading Chain served the seventeen new students and their 54 fellows is shown in Tables VIII and IX. It may be seen that overall improvement was such that post test scores in reading and the content areas approximates the rate of growth in the sixth grade which had no influx of new students.

Table IX demonstrates that the new students shared with the old in producing this remarkable growth record. It may be seen, for instance, that on the Reading Vocabulary pre test, Quartile 1 is at 3.6

Video Tape Patterning, Patterson Road School

and on the post test it is 5.8. On the Reading Comprehension pre test, Quartile 1 is at 3.1 and on the post test it is 6.0.

In the fifth grade post tests boys outachieve girls in every area except Reading Vocabulary where the scores of 7.3 are identical. It should be noted, however, that the populations are somewhat out of balance with 43 boys and only 28 girls.

Sixth Grade Study

Tables X and XI treat with the school's sixth graders. When tested in May, 1975 these sixth graders had been in the program two and one-half years. During the *Video Trip to Patterson Road School* certain of these youngsters are seen working in *The Hobbit, Animal Farm,* and *Flowers for Algernon.*

Patterson Road sixth graders after two and a half years in the program are still showing a rate of growth in Total Reading which is in excess of two months for each month's instruction. This group also generated one of the most significant bits of data in the study. EVERY ONE OF THE 16 BOYS AND GIRLS WHO MAKE UP THE FOURTH QUARTILE HAD A SCORE OF 11.9 IN READING COMPREHENSION. THIS IS THE HIGHEST SCORE OBTAINABLE ON LEVEL 2, FORM S OF THE *C.T.B.S.*

Patterson Road's principal, Jerry Coker, says, "There appears to be no limit as to how far we can take our boys and girls, so long as our teachers are able to ask the next question." This data, when contrasted with that in the other tables, shows that across the grades acceleration is constant. There are no plateaus and no points at which students stop learning.

Educationally Handicapped Study

Table XII treats with those fifteen identified Educationally Handicapped (EH) students who are excluded from the grade level studies. In California, students identified as being Educationally Handicapped must be of normal intelligence and exhibit a marked inability to learn in a normal classroom setting. Diagnosis may include organicity, emotionality, or both.

The Educationally Handicapped population at Patterson Road may be either endemic or else have transferred there from a nearby school. They are excluded from the general study because many of them have attended the school for a short period of time and some others do not take part in the Reading Chain. It should be pointed out, however, that all are being taught to read with Formula Phonics methodology and that when they are emotionally and medically able, Patterson Road's Educationally Handicapped boys and girls do "mainstream" in the Reading Chain Dialog Groups.

Summary

Table XIII is designed to help identify which population of students at each grade level is actually making the gains in Total Reading which are found in the other tables. There are fundamental questions which an examination of the data will help answer:

1. Is it possible for a single reading program design, which uses throughout the same decoding, spelling, and language processing procedures, to serve students of vastly different age, grade, and ability levels?
2. Is it possible to teach a broad spectrum of students total reading skills and how to process content area materials in group settings? Or do these processes demand individualization?
3. Is it possible to train all of the teachers in a school to successfully teach reading and language processing skills to ungraded, homogeneous reading groups of second through sixth graders?
4. Is it possible to design a reading-language processing system which can be totally articulated into day to day instruction in the several content areas?
5. Is it ever possible to justify placing any school's most academically able boys and girls into any kind of a formal reading-language processing program?

To help answer these questions Table XIII deals with three select groups made up of seven students each, at each grade level. The groups consist of those seven students who scored the *lowest* on the Total Reading pre test; those seven students whose scores on Total Reading are nearest the *center;* and those seven students with *highest* scores. Mean pre and post test Total Reading scores were then determined for each group. Where they are available, mean Total I.Q. scores for each group are also shown.

The I.Q. scores for grade six are particularly significant since they suggest that this population is bimodal in terms of academic capability. This pattern, which is not found in either the fourth or fifth grade data, must be considered when contrasting the "middle group" post test Total Reading scores for grades five and six.

When the Formula Phonics Reading Chain was instituted at Patterson Road School, the staff set out a number of program objectives. A long range objective was that average grade equivalent reading scores for the school's boys and girls were to be at least two years above their grade norm. After two and a half years in the program, this appears to be an attainable goal.

Grade	N =	Grade Norm May, 1975	Total Reading May, 1975	Difference Above Grade Norm
2	40	2.8	3.4	+0.6
3	49	3.8	5.3	+1.5
4	53	4.8	6.3	+1.5
5	71	5.8	7.5	+1.7
6	58	6.8	8.8	+2.0

Further, an examination of the Reading Comprehension data for grades three through six shows that every class except one is achieving at least two years above grade norm.

Grade	N =	Grade Norm May, 1975	Reading Comp. May, 1975	Difference Above Grade Norm
3	49	3.8	5.9	+2.1
4	53	4.8	7.0	+2.2
5	71	5.8	7.7	+1.9
6	58	6.8	9.1	+2.3

Table II

Learner Verification Study—Patterson Road School

Grade Two—Date of Study 7-75—Grade Norm 2.8
I.Q.—Not Available
Pre Test (Reading) *Comprehensive Test of Basic Skills—Level C, Form S* 9-74—Grade Norm 2.0
Post Test (Battery) *Comprehensive Test of Basic Skills—Level C, Form S* 5-75—Grade Norm 2.8

Means 5-75 (Includes one educationally handicapped—EH—student)

	Total Reading	Total Language	Total Mathematics	Total Battery
Class A (N=26)	3.3	3.5	3.0	3.1
Class B (N=25)	3.5	3.0	2.8	3.0

Grade Equivalent Scores 5-75 (One EH student excluded and ten with no Pre Test)

Girls (N-23)	3.7	4.0	3.2	3.6
Boys (N=17)	3.1	2.9	3.0	2.8
Total (N=40)	3.4	3.5	3.1	3.2

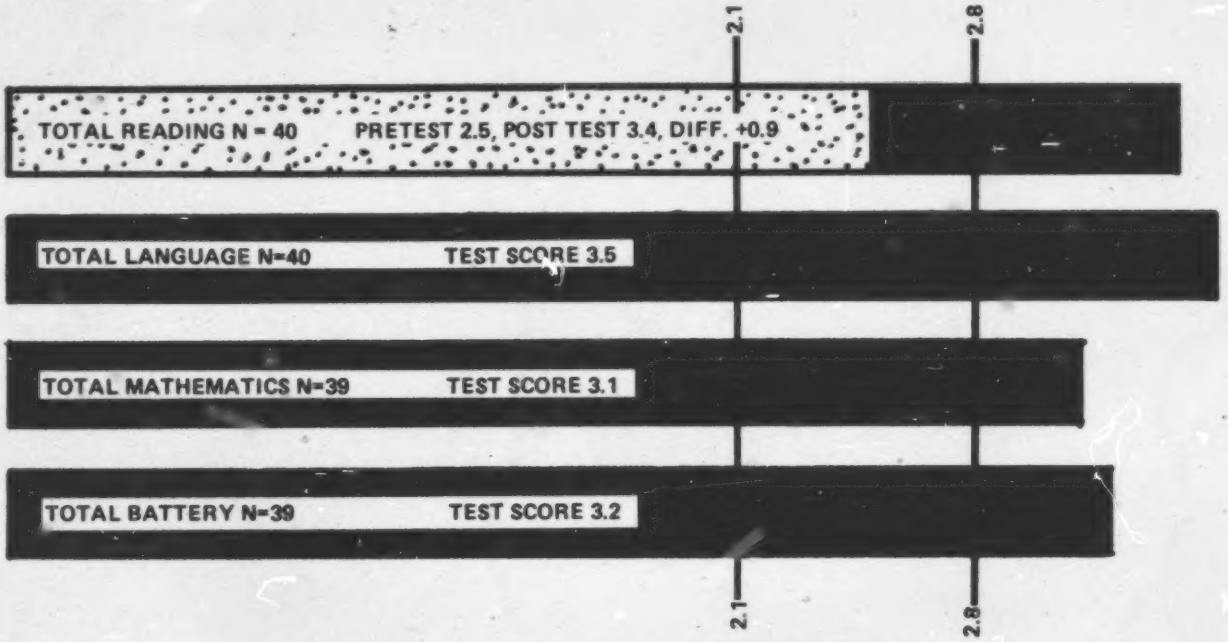

2.1
2.8
TOTAL READING N = 40 PRETEST 2.5, POST TEST 3.4, DIFF. +0.9
TOTAL LANGUAGE N=40 TEST SCORE 3.5
TOTAL MATHEMATICS N=39 TEST SCORE 3.1
TOTAL BATTERY N=39 TEST SCORE 3.2
2.1
2.8

Table III

Below grade norm

Distribution Grade Two

Grade Equivalent	Pre Test 9-74 Reading N=40	Post Test 5-75 Reading N=40	Total 5-75 Lang. N=40	Total 5-75 Math N=39	Total 5-75 Battery N=39
Grade Norm	2.1	2.8	2.8	2.8	2.8
0.6	1	–	–	–	–
1.5	1	–	–	–	–
1.6	3	–	–	–	–
1.7	3	1	–	–	–
1.8	–	–	–	1	1
1.9	2 Q1	–	2	–	–
2.0	3	–	–	1	–
2.1	2	–	–	1	–
2.2	3	2	2	–	–
2.3	4 Q2	–	1	2	3
2.4	3	1	2	–	–
2.5	1	2	2	–	3
2.6	–	–	–	2	2
2.7	–	–	3 Q1	5 Q1	1 Q1
2.8	1	4 Q1	–	3	1
2.9	1	–	3	1	3
3.0	,	1	2	3 Q2	1
3.1	–	–	–	2	–
3.2	1 Q3	3	2	3	4
3.3	–	–	4 Q2	2	1 Q2
3.4	3	2	3	5 Q3	3
3.5	2	1	1	1	1
3.6	–	–	2	–	4
3.7	–	8 Q2	–	1	1 Q3
3.8	–	–	–	–	1
3.9	–	1	–	4	1
4.0	–	–	–	–	2
4.1	–	–	1 Q3	1	2
4.2	2	7 Q3	–	–	–
4.5	1	3	–	1	2
4.8	–	–	3	–	1
5.0	1	3	–	–	–
5.1	–	–	–	–	1
5.2	–	–	2	–	–
5.6	–	–	2	–	–
5.9	–	–	3	–	–

Table IV

Learner Verification Study—Patterson Road School

Grade Three—Date of Study 7—75—Grade Norm 3.8

I.Q.—Not Available

Pre Test (Reading) *Comprehensive Test of Basic Skills—Level 1, Form S* 9-74—Grade Norm 3.0

Post Test (Battery) *Comprehensive Test of Basic Skills—Level 1, Form S* 5-75—Grade Norm 3.8

Means 5-75 (Includes one educational handicapped—EH—student)

	Reading Voc.	Reading Comp.	Reading Total	Total Lang.	Total Math	Refer.	Sci.	Soc. St.
Class A (N=28)	4.8	5.5	5.1	4.6	4.9	4.5	4.6	4.9
Class B (N=28)	4.7	5.3	4.9	4.1	4.3	4.1	4.2	4.3
Mean Grade Equivalent Scores 5-75 (One EH student excluded and six with no Pre Test)								
Girls (N=23)	5.0	6.3	5.4	5.2	4.6	4.8	4.8	4.9
Boys (N=26)	5.0	5.6	5.1	4.3	4.7	4.5	4.8	5.1
Total (N=49)	5.0	5.9	5.3	4.8	4.6	4.7	4.8	4.9

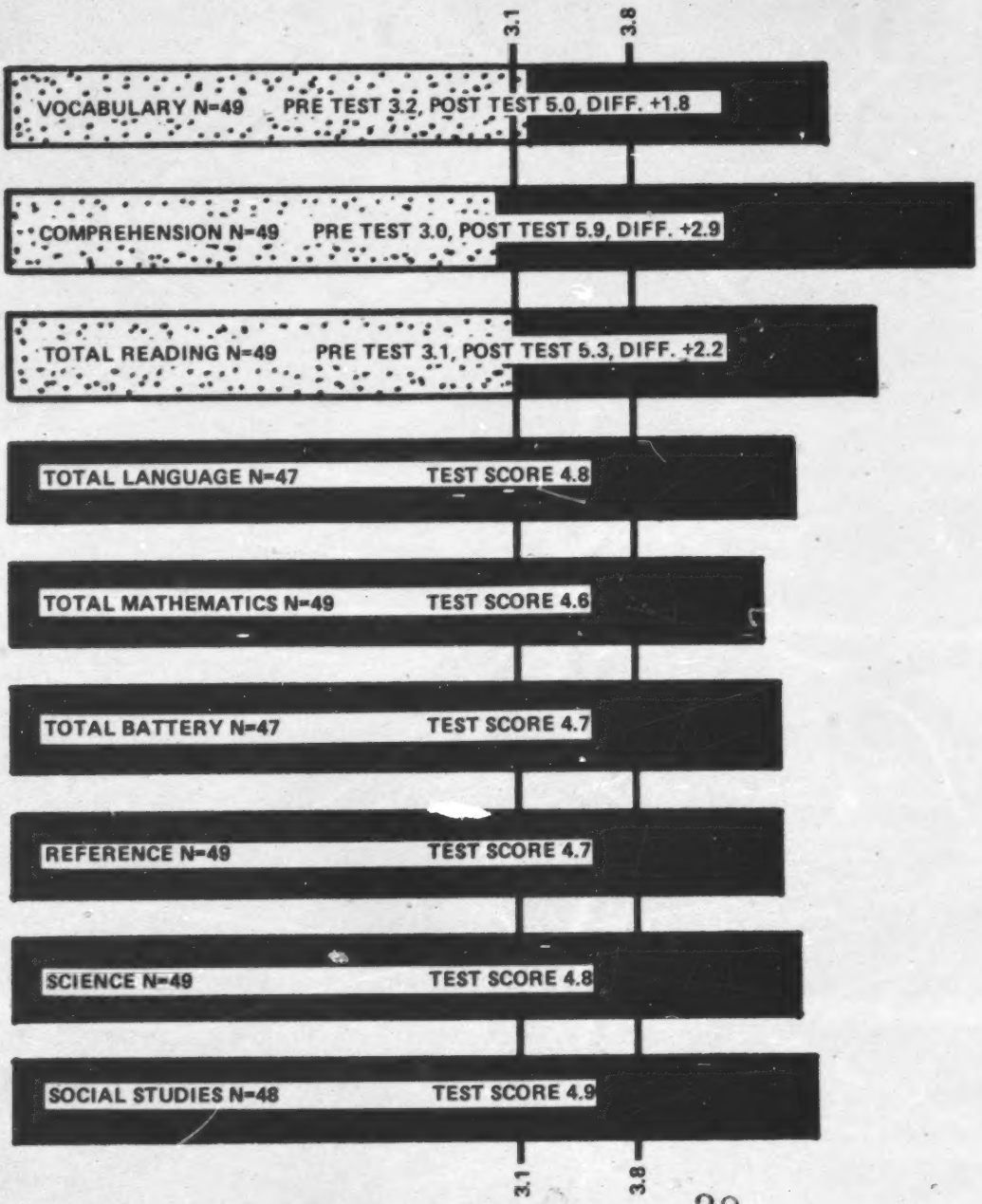

3.1
3.8
VOCABULARY N=49 PRE TEST 3.2, POST TEST 5.0, DIFF. +1.8
COMPREHENSION N=49 PRE TEST 3.0, POST TEST 5.9, DIFF. +2.9
TOTAL READING N=49 PRE TEST 3.1, POST TEST 5.3, DIFF. +2.2
TOTAL LANGUAGE N=47 TEST SCORE 4.8
TOTAL MATHEMATICS N=49 TEST SCORE 4.6
TOTAL BATTERY N=47 TEST SCORE 4.7
REFERENCE N=49 TEST SCORE 4.7
SCIENCE N=49 TEST SCORE 4.8
SOCIAL STUDIES N=48 TEST SCORE 4.9
3.1
3.8

Table V

Distribution—Grade Three—C.T.B.S. Level 1, Form S

Grade Norms	3.1	3.8	3.1	3.8	3.1	3.8	3.8	3.8	3.8	3.8	3.8
Grade Equivalents	Pre Voc.	Post Voc.	Pre Comp.	Post Comp.	Pre Total	Post Total	Lang.	Math	Refer.	Sci.	Soc. St.
1.0	1	–	6	–	2	–	–	–	1	1	–
1.1	1	–	–	–	–	–	–	–	–	–	–
1.2	–	–	1	–	–	–	–	–	–	–	–
1.3	–	–	–	–	–	–	–	–	–	1	–
1.4	–	–	–	–	–	–	–	–	1	–	–
1.5	–	–	–	–	2	–	–	–	–	–	1
1.7	4	–	1	–	1	–	–	–	–	–	1
1.8	1	–	2	1	2	1	1	–	1	–	–
1.9	3	1	–	–	3	–	–	–	–	–	–
2.0	–	–	2Q1	–	3Q1	–	–	–	–	4	–
2.1	2Q1	–	4	–	2	–	–	–	–	–	–
2.2	2	–	1	1	2	–	1	–	–	1	2
2.3	–	–	1	–	–	–	2	–	–	–	–
2.4	–	–	1	–	–	–	1	–	3	1	1
2.5	2	–	3	–	1	1	–	–	–	–	2
2.6	2	–	2Q2	–	3	–	–	–	–	–	–
2.7	–	–	3	–	1	–	1	–	2	–	–
2.8	3	–	–	–	–	–	1	–	–	–	–
2.9	–	2	–	1	1	1	1	1	–	–	–
3.0	2	–	–	1	1Q2	–	2	1	1	–	1
3.1	1Q2	–	2	–	–	–	–	1	–	1	–
3.2	3	–	1	–	2	–	1	–	3Q1	–	2
3.3	–	–	1	–	1	1	1Q1	1	–	1	–
3.4	1	2	2	–	3	–	–	2	–	–	2Q1
3.5	2	1	2	–	2	1	–	1	2	1Q1	–
3.6	2	1	3Q3	1	2	–	1	4Q1	–	–	–
3.7	1	–	1	–	–	1	–	3	–	5	–
3.8	–	–	–	1	1Q3	–	–	2	4	–	2
3.9	2	1	–	3	–	3	3	–	–	–	–
4.0	1Q3	5Q1	1	–	3	1	2	–	–	1	2
4.1	–	–	1	–	–	1Q1	2	1	6Q2	–	–
4.2	2	3	–	4Q1	1	1	4Q2	3	–	9Q2	3
4.3	2	4	2	2	1	2	–	–	–	–	–
4.4	–	–	–	–	–	–	–	3Q2	–	–	1
4.5	–	3	–	–	1	4	2	2	6	3	–
4.6	–	–	1	2	1	2	1	4	–	–	3Q2
4.7	1	–	–	–	1	1	–	1	–	1	3
4.8	1	3Q2	2	2	2	2Q2	3	1	–	–	–

Grade Norms	3.1	3.8	3.1	3.8	3.1	3.8	3.8	3.8	3.8	3.8	3.8
Grade Equivalents	Pre Voc.	Post Voc.	Pre Comp.	Post Comp.	Pre Total	Post Total	Lang.	Math	Refer.	Sci.	Soc. St.
4.9	1	–	–	–	–	–	1	1	4	–	3
5.0	3	2	–	2	–	2	–	2	–	2	–
5.1	–	–	–	–	–	1	1	1Q3	–	–	1
5.2	–	2	–	1	–	2	–	1	–	–	2
5.3	–	–	–	3Q2	–	–	–	–	–	1	–
5.4	–	3	–	–	–	2	–	2	–	–	–
5.5	–	–	–	–	–	3	–	–	2Q3	–	–
5.6	–	–	3	4	–	–	2	–	–	3Q3	2
5.7	–	4Q3	–	–	–	1	–	–	–	–	–
5.8	–	–	–	–	–	–	4Q3	–	–	–	–
5.9	–	–	–	–	–	–	–	–	–	–	4Q3
6.0	–	–	1	4	2	–	–	1	–	3	–
6.1	1	3	–	–	–	–	1	–	–	–	–
6.2	–	–	–	–	–	–	–	–	4	–	–
6.3	–	–	–	–	–	3Q3	–	1	–	–	–
6.4	–	–	–	–	–	–	–	–	–	1	–
6.5	1	5	–	–	–	–	–	–	–	–	–
6.6	–	–	–	–	–	–	1	–	–	–	–
6.7	–	–	–	–	–	3	–	–	–	–	–
6.8	–	–	1	3Q3	–	–	–	–	–	–	3
6.9	–	–	–	–	–	–	1	–	–	1	–
7.0	–	2	–	–	–	4	–	5	–	–	–
7.2	–	–	–	–	–	–	–	–	4	–	–
7.3	–	–	–	–	–	–	3	–	–	–	–
7.4	–	–	–	–	–	2	–	–	–	3	–
7.5	–	1	–	–	–	–	–	1	–	–	2
7.6	–	–	–	3	–	–	–	–	–	–	–
7.8	–	–	–	1	–	–	–	–	–	–	–
7.9	–	–	–	–	–	2	–	–	–	2	–
8.0	–	–	–	–	–	–	–	–	–	–	1
8.2	–	1	–	–	–	–	–	–	–	–	–
8.4	–	–	–	3	–	–	–	–	–	–	–
8.5	–	–	–	–	–	–	–	1	3	–	–
9.3	–	–	–	–	–	–	–	–	–	1	2
9.5	–	–	–	6	–	1	–	–	–	–	–
9.6	–	–	–	–	–	–	–	–	2	–	–
9.9	–	–	–	1	–	–	3	–	–	2	2

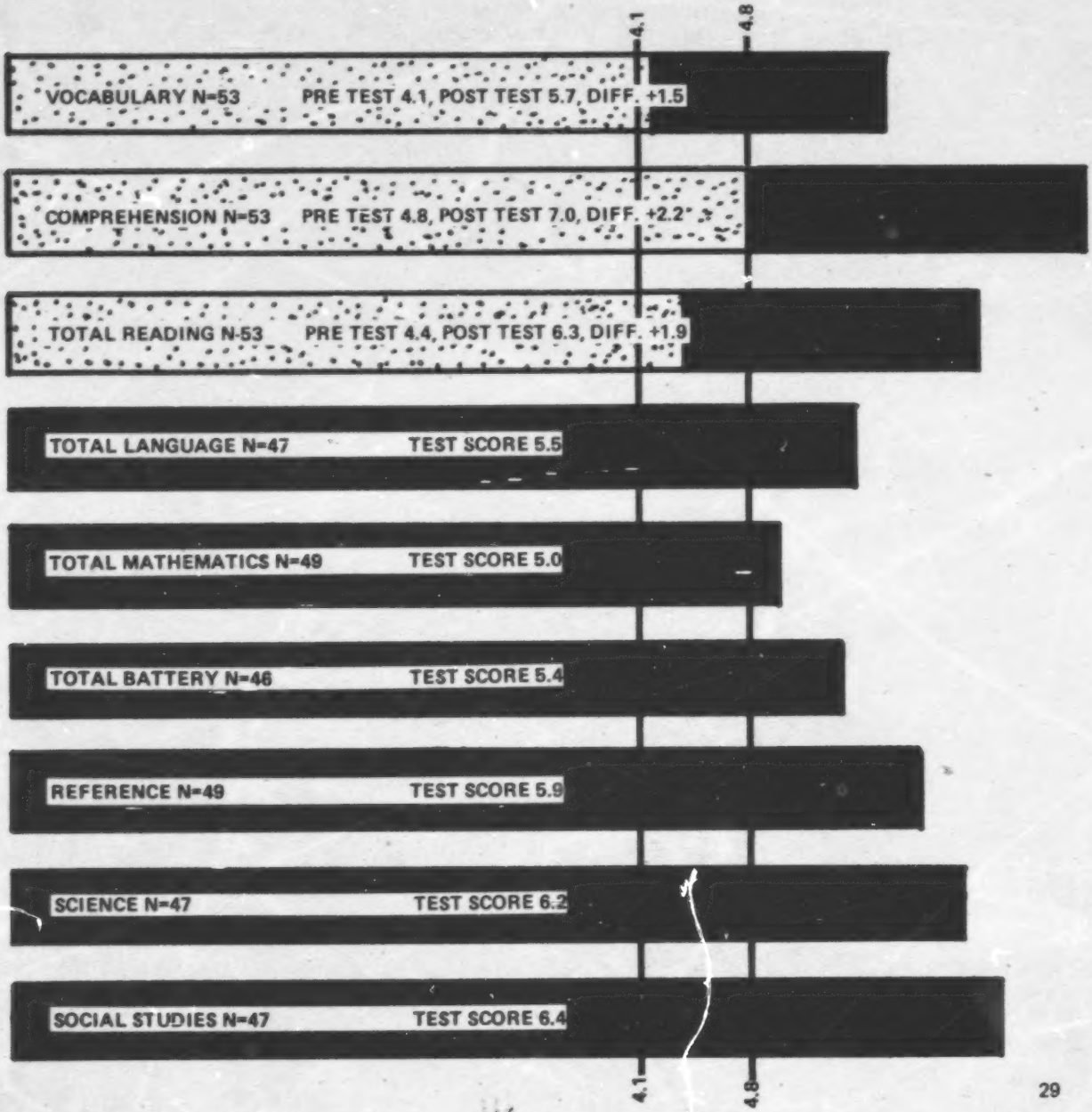
Below grade norm

Table VI

Learner Verification Study—Patterson Road School
Grade Four—Date of Study 7-75—Grade Norm 4.8
I.Q.—*Short Form, Test of Academic Aptitude—Level 2* 5-75
N=49 Language 106 Non-Language 107 Total I.Q. 107
Pre Test (Reading) *Comprehensive Test of Basic Skills—Level 1, Form S* 9-74—Grade Norm 4.0
Post Test (Battery) *Comprehensive Test of Basic Skills—Level 1, Form S* 5-75—Grade Norm 4.8

Means 5-75 (Includes four educationally handicapped—EH—students)

	Reading Voc.	Reading Comp.	Reading Total	Total Lang.	Total Math	Refer. Refer.	Sc Sci.	Soc.
Class A (N=29)	5.4	6.1	5.7	5.6	5.2	5.4	5.7	5.5
Class B (N=30)	5.6	6.7	6.0	4.8	4.9	4.7	5.9	6.4
Mean Grade Equivalent Scores 5-75 (Four EH students excluded and two with no Pre Test)								
Girls (N=21)	5.4	7.1	6.1	6.0	4.9	6.0	6.2	6.4
Boys (N=32)	5.9	6.9	6.4	5.2	5.1	5.6	6.3	6.4
Total (N=53)	5.7	7.0	6.3	5.5	5.0	5.9	6.2	6.4


4.1
4.8
VOCABULARY N=53 PRE TEST 4.1, POST TEST 5.7, DIFF. +1.5
COMPREHENSION N=53 PRE TEST 4.8, POST TEST 7.0, DIFF. +2.2
TOTAL READING N=53 PRE TEST 4.4, POST TEST 6.3, DIFF. +1.9
TOTAL LANGUAGE N=47 TEST SCORE 5.5
TOTAL MATHEMATICS N=49 TEST SCORE 5.0
TOTAL BATTERY N=46 TEST SCORE 5.4
REFERENCE N=49 TEST SCORE 5.9
SCIENCE N=47 TEST SCORE 6.2
SOCIAL STUDIES N=47 TEST SCORE 6.4
4.1
4.8

Pre Test (Reading) 9-74
Post Test (Battery) 5-75

Table VII

Distribution—Grade Four—C.T.B.S. Level 1, Form S

Grade Norms	4.1	4.8	4.1	4.8	4.1	4.8	4.8	4.8	4.8	4.8	4.8
Grade Equivalents	Pre Voc.	Post Voc.	Pre Comp.	Post Comp.	Pre Total	Post Total	Lang.	Math	Refer.	Sci.	Soc. St.
1.0	1	–	–	–	1	–	–	–	1	–	–
1.2	–	–	2	–	1	–	–	–	–	–	–
1.3	1	–	–	–	–	–	–	–	–	–	–
1.4	–	–	–	–	–	–	–	–	1	–	–
1.6	1	–	–	–	–	–	–	–	–	–	–
1.7	1	–	–	–	1	–	–	–	–	–	–
1.8	–	–	–	–	–	–	–	–	1	–	–
1.9	–	–	–	–	–	–	1	–	–	–	–
2.0	1	–	1	–	1	–	–	–	–	–	–
2.1	–	–	1	–	–	–	–	–	–	–	–
2.2	–	–	1	–	–	–	1	–	–	1	1
2.3	–	–	–	–	1	–	–	–	–	–	–
2.5	–	–	–	–	–	–	1	–	–	–	1
2.6	1	–	–	–	–	–	–	–	–	–	–
2.7	–	–	2	1	–	–	–	–	–	–	–
2.8	1	1	–	–	1	1	–	1	–	–	–
2.9	1	1	1	–	1	–	2	–	–	2	–
3.0	2	–	–	1	–	–	–	2	2	–	–
3.1	–	–	1	–	–	–	–	1	–	–	–
3.2	1Q1	–	2	–	1	–	–	2	1	–	1
3.3	–	–	2Q1	1	3	–	2	1	–	–	1
3.4	1	–	4	1	2Q1	1	–	1	–	–	–
3.5	2	–	–	2	2	1	1	1	1	1	–
3.6	3	1	2	1	1	–	2	2	–	–	1
3.7	1	–	1	–	5	2	–	1Q1	–	5	–
3.8	–	–	–	–	1Q2	1	–	1	1	–	1
3.9	–	–	2	–	–	1	2Q1	1	–	–	–
4.0	3	1	1	1	2	2	–	1	–	1	1
4.1	–	–	–	–	–	–	1	1	4Q1	–	–
4.2	2	2	1Q2	1	1	–	–	2	–	1	1
4.3	2Q2	1	3	1	–	–	1	–	–	–	–
4.4	–	–	1	–	–	–	–	1	–	–	2
4.5	2	2	–	–	2	–	1	1	2	1Q1	–
4.6	–	–	–	–	1	–	1	1	–	–	1
4.7	1	–	–	–	2	2	–	–	–	2	–
4.8	5	5Q1	2	–	–	1Q1	2	2	–	–	–
4.9	–	–	–	–	–	–	2	1Q2	6	–	1Q1
5.0	5Q3	1	–	2Q1	2	1	–	–	–	2	–
5.1	–	–	–	–	3Q3	–	2Q2	2	–	–	3

Below grade norm

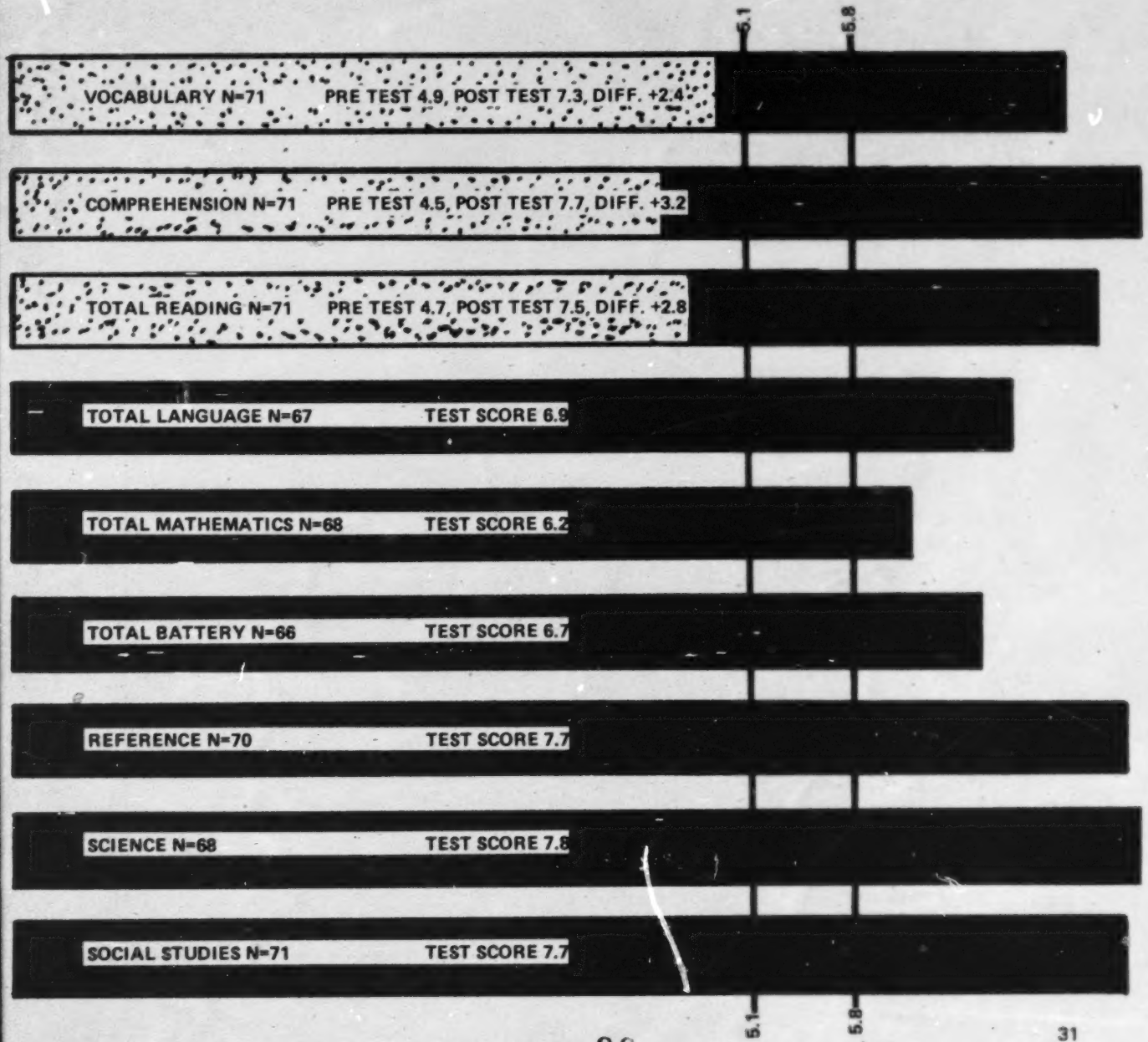
Grade Norms	4.1	4.8	4.1	4.8	4.1	4.8	4.8	4.8	4.8	4.8	4.8
Grade Equivalents	Pre Voc.	Post Voc.	Pre Comp.	Post Comp.	Pre Total	Post Total	Lang.	Math	Refer.	Sci.	Soc. St.
5.2	2	4	–	–	1	2	2	1	–	–	3
5.3	–	–	1	3	–	–	–	–	–	1	–
5.4	1	2	–	–	1	–	1	–	–	–	–
5.5	–	–	–	–	3	1	–	1	6Q2	–	2
5.6	2	–	2	1	–	–	1	–	–	2	1
5.7	1	1	–	–	–	1	–	1	–	–	–
5.8	–	–	–	–	–	–	1	–	–	–	–
5.9	–	–	–	–	–	3	–	–	–	–	2
6.0	–	–	4Q3	5	–	3	–	1	–	4	–
6.1	–	3Q2	–	–	–	–	1	–	–	–	–
6.2	–	–	–	–	–	–	–	–	3	–	4Q2
6.3	–	–	–	–	1	4Q2	–	5Q3	–	–	–
6.4	–	1	–	–	–	–	–	–	–	2	–
6.5	2	11Q3	–	–	–	–	–	–	–	–	–
6.6	–	–	1	–	–	–	3	–	–	–	–
6.7	1	–	–	–	2	3	–	3	–	–	–
6.8	–	–	1	–	–	–	–	–	–	–	3
6.9	–	–	–	–	–	–	3Q3	–	–	2Q2	–
7.0	2	5	–	–	3	1	–	3	–	–	–
7.2	–	–	–	–	–	–	–	–	5Q3	–	–
7.4	–	–	–	–	–	3	–	–	–	3	–
7.5	–	3	–	–	–	–	–	3	–	–	1
7.6	–	–	4	3Q2	–	–	–	–	–	–	–
7.7	–	–	–	–	1	–	–	–	–	–	–
7.9	–	–	–	–	2	3Q3	–	–	–	7	–
8.0	–	–	–	–	–	–	–	2	–	–	3
8.2	1	1	–	–	–	–	3	–	–	–	–
8.3	–	–	–	–	1	2	–	–	–	–	–
8.4	–	–	3	7	–	–	–	–	–	–	5Q3
8.5	–	–	–	–	–	–	–	–	9	3Q3	–
8.7	–	–	–	1	–	–	1	–	–	–	–
8.8	–	–	–	–	–	5	–	–	–	–	–
9.1	–	3	–	1	–	–	–	–	–	–	–
9.3	–	–	–	–	–	–	1	–	–	2	4
9.5	–	–	2	7Q3	–	3	–	–	–	–	–
9.6	–	–	–	–	–	–	–	–	3	–	–
9.8	–	–	–	–	–	–	2	–	–	–	–
9.9	–	–	2	10	–	3	3	–	1	4	4

Table VIII

Learner Verification Study—Patterson Road School
Grade Five—Date of Study 7-75—Grade Norm 5.8
I.Q.—*Short Form, Test of Academic Aptitude—Level 3* 5-75
N=68 Language 105 Non-Language 108 Total I.Q. 107
Pre Test (Reading) *Comprehensive Test of Basic Skills—Level 2, Form S* 9-74—Grade Norm 5.0
Post Test (Battery) *Comprehensive Test of Basic Skills—Level 2, Form S* 5-75—Grade Norm 5.8

Means 5-75 (Includes five educationally handicapped—EH—students)

	Reading Voc.	Reading Comp.	Reading Total	Total Lang.	Total Math	Refer.	Sci.	Soc. St.
Class A (N=27)	6.7	7.6	7.1	5.8	6.0	6.9	7.6	7.1
Class B (N=29)	7.3	7.8	7.5	6.4	6.1	7.1	6.3	8.0
Class C (N=28)	6.8	7.5	7.1	6.1	5.7	7.6	7.0	6.7
Mean Grade Equivalent Scores 5-75 (Five EH students excluded and eight with no Pre Test)								
Girls (N=28)	7.3	7.6	7.5	6.6	5.9	7.2	7.1	7.6
Boys (N=43)	7.3	7.8	7.6	7.0	6.5	8.0	8.2	7.9
Total (N=71)	7.3	7.7	7.5	6.9	6.2	7.7	7.8	7.7


5.1
5.8
VOCABULARY N=71 PRE TEST 4.9, POST TEST 7.3, DIFF. +2.4
COMPREHENSION N=71 PRE TEST 4.5, POST TEST 7.7, DIFF. +3.2
TOTAL READING N=71 PRE TEST 4.7, POST TEST 7.5, DIFF. +2.8
TOTAL LANGUAGE N=67 TEST SCORE 6.9
TOTAL MATHEMATICS N=68 TEST SCORE 6.2
TOTAL BATTERY N=66 TEST SCORE 6.7
REFERENCE N=70 TEST SCORE 7.7
SCIENCE N=68 TEST SCORE 7.8
SOCIAL STUDIES N=71 TEST SCORE 7.7
5.1
5.8

Pre Test (Reading) 9-74
Post Test (Battery) 5-75

Table IX

Distribution—Grade Five—C.T.B.S. Level 2, Form S

Grade Norms	5.1	5.8	5.1	5.8	5.1	5.8	5.8	5.8	5.8	5.8	5.8
Grade Equivalents	Pre Voc.	Post Voc.	Pre Comp.	Post Comp.	Pre Total	Post Total	Lang.	Math	Refer.	Sci.	Soc. St.
1.0	–	–	–	–	–	–	–	–	–	2	–
1.4	–	–	1	–	–	–	–	–	–	–	–
1.5	–	–	1	1	–	–	–	–	–	–	–
1.6	2	–	–	–	–	–	–	–	–	–	–
1.7	–	–	1	–	1	–	–	–	–	–	–
1.8	–	–	–	–	1	1	–	–	–	–	–
1.9	1	–	–	–	–	–	–	–	–	1	–
2.0	–	–	2	–	–	–	–	–	–	–	–
2.1	1	–	1	–	1	–	–	1	–	–	–
2.2	–	–	1	–	–	–	–	–	1	1	–
2.4	–	–	1	–	3	–	–	–	–	–	–
2.5	–	1	2	–	–	–	–	–	3	–	–
2.6	2	–	2	–	1	–	–	–	–	–	2
2.7	–	–	2	–	–	–	1	–	–	–	–
2.8	1	–	–	–	2	–	2	–	–	–	–
2.9	2	–	–	–	2	–	–	–	–	3	1
3.0	2	–	2	–	2	–	–	1	–	–	–
3.1	–	–	1Q1	–	–	–	–	–	–	–	–
3.2	–	–	2	1	1	–	–	–	–	–	–
3.3	–	–	1	–	–	–	1	–	–	1	2
3.4	2	–	1	1	3Q1	–	–	–	–	–	–
3.5	3	–	1	–	1	–	–	–	–	–	–
3.6	2Q1	–	2	–	1	–	2	2	1	1	–
3.7	1	–	1	–	3	–	2	2	–	–	–
3.8	–	–	4	2	1	–	–	–	–	–	–
3.9	–	–	2	–	2	1	–	1	–	–	–
4.0	4	–	3	–	4	–	1	1	5	–	1
4.1	–	–	–	–	2	–	2	2	–	–	–
4.2	2	–	3Q2	1	2	–	1	3	–	–	–
4.3	5	–	3	–	2Q2	–	1	–	–	–	–
4.4	1	1	2	1	3	–	2	1	4	–	1
4.5	1	–	–	–	4	–	–	1	–	–	–
4.6	1Q2	–	–	–	1	–	1	–	–	–	–
4.7	6	2	1	1	1	1	1	–	–	–	1
4.8	1	–	2	–	1	1	–	1	4Q1	–	–
4.9	–	1	–	–	2	1	–	2Q1	–	2	1
5.0	1	–	3	–	1	1	–	2	–	2	–
5.1	1	4	3	4	1	–	1Q1	2	–	–	2
5.2	5	2	–	–	–	2	–	1	–	–	–
5.3	–	–	4Q3	2	1	–	4	3	2	–	5
5.4	2	2	1	1	–	1	–	3	–	7Q1	–
5.5	–	–	–	–	–	6	3	1	–	–	2Q1
5.6	1	2	3	1	–	1	–	3	–	–	–
5.7	1	–	–	–	3Q3	1	3	2	–	–	4
5.8	2Q3	3Q1	1	–	1	–	–	1Q2	10	2	–
5.9	–	–	–	–	–	2Q1	2	1	–	–	–
6.0	–	–	–	3Q1	1	1	–	1	–	–	4
6.1	3	3	–	–	–	2	1	1	–	–	–
6.2	–	–	–	1	1	–	–	1	–	–	–
6.3	1	3	–	–	1	1	2	2	–	5	2

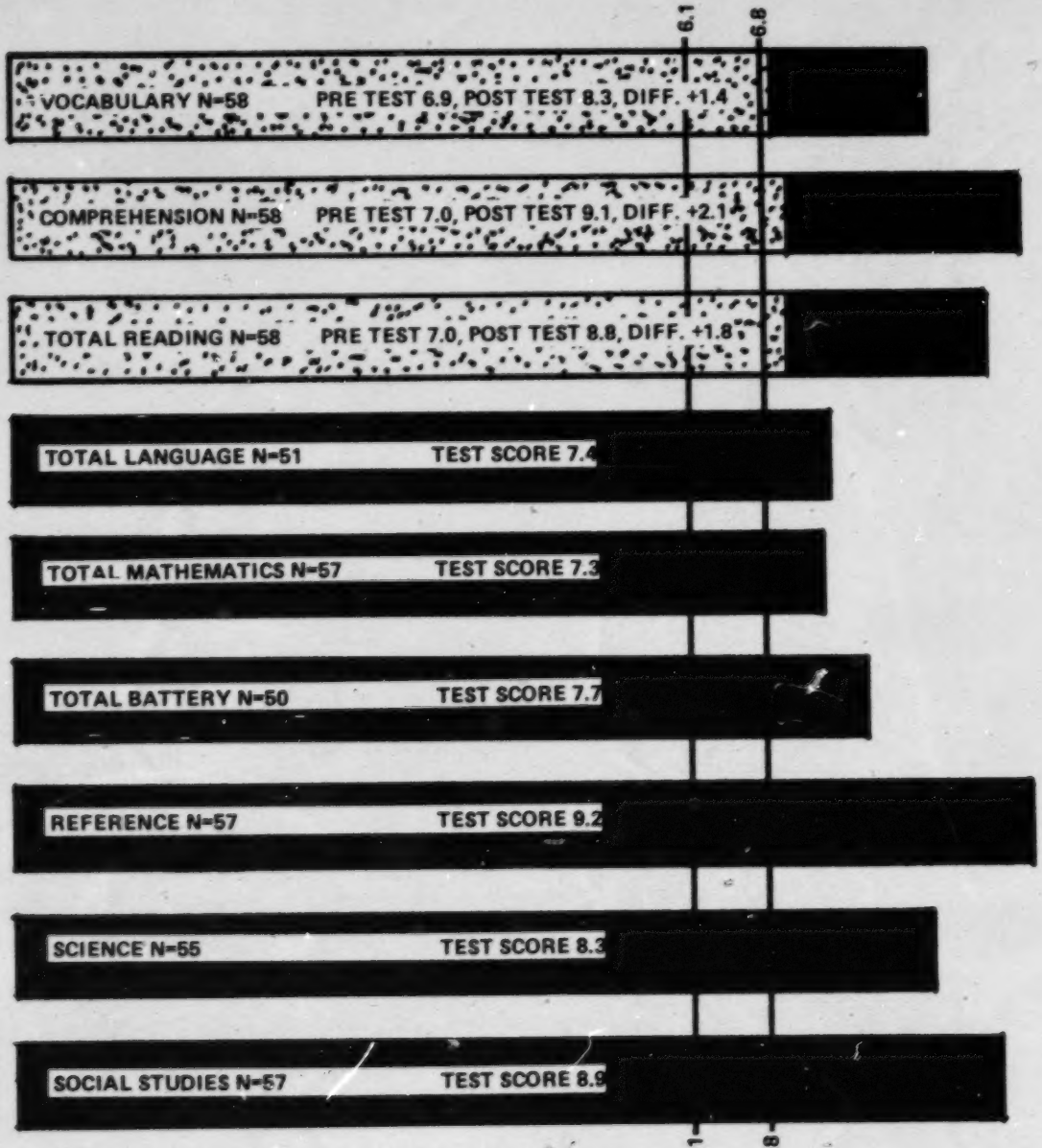
Below grade norm

Grade Norms	5.1	5.8	5.1	5.8	5.1	5.8	5.8	5.8	5.8	5.8	5.8
Grade Equivalents	Pre Voc.	Post Voc.	Pre Comp.	Post Comp.	Pre Total	Post Total	Lang.	Math	Refer.	Sci.	Soc. St.
6.4	–	–	–	1	4	1	–	1	–	–	–
6.5	3	2	2	3	2	3	–	2	–	–	–
6.6	–	–	–	–	–	–	2Q2	–	3	–	–
6.7	–	–	–	–	1	2	4	3	–	–	–
6.8	–	4	–	–	–	1	–	3	–	4	–
6.9	–	–	–	4	–	3	–	2Q3	–	–	4
7.0	–	8Q2	–	–	–	–	2	–	–	–	–
7.1	–	–	–	–	–	3	–	–	–	–	–
7.2	–	–	–	–	1	1Q2	–	–	–	–	–
7.3	2	1	1	6	–	–	–	–	–	–	–
7.4	–	–	–	–	2	1	–	–	3	–	–
7.5	1	–	–	1	–	1	3	–	–	–	4Q2
7.6	3	4	3	1Q2	–	–	–	–	–	–	–
7.7	–	–	–	–	–	3	1	1Q2	–	–	–
7.8	–	–	–	–	–	–	–	–	–	4Q2	–
7.9	1	7	–	–	–	3	–	–	–	–	2
8.0	–	–	1	5	1	–	–	2	–	–	–
8.1	–	–	–	–	–	2	–	–	–	–	–
8.2	2	–	–	–	–	1	4	–	–	–	–
8.3	2	6Q3	–	–	–	–	–	–	–	3	4
8.4	–	–	2	4	–	–	3	–	–	–	–
8.5	–	–	–	–	–	4	–	2	–	–	–
8.6	–	–	–	–	–	–	–	–	6	–	–
8.7	–	–	–	–	1	2Q3	1Q3	–	–	–	5
8.8	–	4	–	5	1	–	–	3	–	–	–
8.9	–	–	–	–	–	–	–	–	–	2	–
9.0	–	–	–	–	–	–	2	1	–	–	–
9.1	–	–	–	–	–	3	–	–	–	–	–
9.3	–	–	–	–	–	–	3	1	–	–	–
9.4	–	–	–	3Q3	1	4	–	–	–	–	3
9.5	–	3	–	–	–	–	–	–	9	5	–
9.6	–	–	–	–	–	–	–	1	–	–	–
9.7	–	–	–	–	–	2	2	–	–	–	–
9.9	–	–	–	2	–	–	1	1	–	3	4Q3
10.1	–	–	–	–	–	–	2	–	–	–	–
10.2	–	3	–	–	–	–	–	–	–	–	–
10.3	–	–	2	4	–	–	–	–	–	–	2
10.4	–	–	–	–	–	1	–	–	3Q3	7Q3	–
10.6	–	–	–	–	–	–	–	–	–	–	3
10.9	–	3	–	7	–	–	–	–	–	5	–
11.0	–	–	–	–	–	1	–	–	–	–	–
11.1	–	–	–	–	–	1	–	–	–	–	–
11.2	–	–	–	–	–	–	–	2	–	–	–
11.4	–	–	–	–	–	1	–	–	–	–	–
11.5	–	–	–	–	–	–	–	–	–	2	–
11.6	–	–	–	–	–	3	–	–	–	–	4
11.7	–	–	–	–	–	–	–	–	11	–	–
11.8	–	–	–	–	–	–	1	–	–	–	–
11.9	–	2	–	5	–	3	4	2	5	7	8

Table X

Learner Verification Study—Patterson Road School
Grade Six—Date of Study 7-75—Grade Norm 6.8
I.Q.—*Short Form, Test of Academic Aptitude—Level 3* 5-75
N=54 Language 104 Non-Language 106 Total I.Q. 106
Pre Test (Reading) *Comprehensive Test of Basic Skills—Level 2, Form S* 9-74—Grade Norm 6.0
Post Test (Battery) *Comprehensive Test of Basic Skills—Level 2, Form S* 5-75—Grade Norm 6.8
Means—5-75 (Includes four educationally handicapped—EH—students)

	Reading Voc.	Reading Comp.	Reading Total	Total Lang.	Total Math	Refer.	Sci.	Soc. St.
Class A (N=35)	8.4	9.7	9.1	7.0	6.3	8.7	7.6	8.4
Class B (N=35)	7.5	8.8	8.1	7.5	7.7	9.4	8.9	9.9
Mean Grade Equivalent Scores 5-75 (Four EH students excluded and eight with no Pre Test)								
Girls (N=27)	8.6	9.7	9.3	7.9	7.3	9.9	8.7	9.6
Boys (N=31)	8.0	8.6	8.3	7.1	7.4	8.7	8.1	8.4
Total (N=58)	8.3	9.1	8.8	7.4	7.3	9.2	8.3	8.9


6.1
6.8
VOCABULARY N=58 PRE TEST 6.9, POST TEST 8.3, DIFF. +1.4
COMPREHENSION N=58 PRE TEST 7.0, POST TEST 9.1, DIFF. +2.1
TOTAL READING N=58 PRE TEST 7.0, POST TEST 8.8, DIFF. +1.8
TOTAL LANGUAGE N=51 TEST SCORE 7.4
TOTAL MATHEMATICS N=57 TEST SCORE 7.3
TOTAL BATTERY N=50 TEST SCORE 7.7
REFERENCE N=57 TEST SCORE 9.2
SCIENCE N=55 TEST SCORE 8.3
SOCIAL STUDIES N=57 TEST SCORE 8.9
6.1
6.8

Pre Test (Reading) 9-74
Post Test (Battery) 5-75

Table XI

Distribution—Grade Six—C.T.B.S. Level 2, Form S

Grade Norms	6.1	6.8	6.1	6.8	6.1	6.8	6.8	6.8	6.8	6.8	6.8
Grade Equivalents	Pre Voc.	Post Voc.	Pre Comp.	Post Comp.	Pre Total	Post Total	Lang.	Math	Refer.	Sci.	Soc. St.
2.0	–	–	1	–	1	–	–	–	–	–	–
2.1	1	–	–	–	–	–	–	–	–	–	–
2.2	–	–	1	–	1	–	–	–	–	–	–
2.3	–	–	1	–	–	–	–	–	–	–	–
2.5	1	–	–	–	–	–	–	–	–	–	–
2.6	–	–	2	–	–	–	–	–	–	–	–
2.8	–	–	–	–	–	–	–	–	–	1	–
2.9	–	–	–	–	–	–	–	–	2	–	–
3.2	–	–	2	1	–	–	1	1	–	–	–
3.3	–	–	–	–	1	–	–	–	–	1	2
3.4	–	–	2	–	–	1	1	1	–	–	–
3.5	–	–	2	–	–	–	–	–	–	–	–
3.6	–	1	–	–	2	–	–	1	–	2	–
3.7	2	–	–	–	1	–	1	1	–	–	–
3.8	–	1	1	–	1	–	1	–	–	–	–
3.9	–	–	–	–	–	–	–	1	–	–	–
4.0	4	–	–	–	–	–	2	1	2	1	1
4.2	1	1	–	–	2	–	1	–	–	–	–
4.3	1	–	1	–	2	–	–	–	–	1	–
4.4	1	–	–	–	–	–	1	–	–	–	1
4.6	1	–	–	–	–	–	1	–	–	–	–
4.7	2Q1	2	4Q1	2	4Q1	–	–	–	–	2	–
4.8	–	–	–	–	–	1	–	2	3	–	–
4.9	–	–	3	2	–	1	–	–	–	–	2
5.0	1	–	–	–	–	–	3	1	–	3	–
5.1	1	1	–	–	–	–	–	1	–	–	1
5.2	2	1	–	–	1	1	–	1	–	–	–
5.3	1	–	–	1	–	–	2Q1	–	4	–	2
5.4	–	1	–	3	1	1	–	1	–	2	–
5.5	2	–	–	–	1	–	3	2Q1	–	–	–
5.6	–	2	–	2	3	3	–	1	–	–	–
5.7	–	–	–	–	2	2	2	1	–	–	2
5.8	2	2	8	1	–	1	–	2	–	1Q1	–
5.9	–	–	–	–	2	–	–	1	–	–	–
6.0	–	–	–	1	1	2	–	2	–	–	4Q1
6.1	–	2	–	–	1	–	1	1	–	–	–
6.2	–	–	1	1	1	–	–	1	–	–	–
6.3	1	1Q1	–	–	1Q2	–	1	2	–	4	2
6.4	1	–	–	–	1	–	–	1Q2	–	–	–
6.5	1	1	1	3Q1	–	3Q1	–	–	–	–	–
6.6	2Q2	–	–	–	–	–	3	1	3Q1	–	–
6.7	–	–	2	–	–	1	2Q1	–	–	–	–
6.8	2	2	–	–	–	1	–	1	–	–	–
6.9	–	–	1Q2	1	1	1	–	2	–	–	1

Grade Norms	6.1	6.8	6.1	6.8	6.1	6.8	6.8	6.8	6.8	6.8	6.8
Grade Equivalents	Pre Voc.	Post Voc.	Pre Comp.	Post Comp.	Pre Total	Post Total	Lang.	Math	Refer.	Sci.	Soc. St.
7.0	–	2	2	–	–	–	2	–	–	–	–
7.2	1	–	–	–	1	1	1	1	–	–	–
7.3	1	2	2	3	–	–	–	4	–	3	–
7.4	1	–	2	–	2	–	–	–	2	–	–
7.5	–	–	–	–	1	–	1	2	–	–	3
7.6	5	2	–	1	–	–	–	–	–	–	–
7.7	–	–	2	–	1	2	–	–	–	–	–
7.8	–	–	–	–	–	–	–	1	–	5Q2	–
7.9	2	1	–	–	–	1	–	–	–	–	2
8.0	–	–	1	1	–	–	–	–	–	–	–
8.1	1	–	–	–	–	–	–	–	–	–	–
8.2	–	–	–	–	1	–	1	–	–	–	–
8.3	–	5Q2	–	–	–	2	–	–	–	3	2
8.4	–	–	–	4	1	–	–	–	–	–	–
8.5	–	–	–	–	1	1	–	–	–	–	–
8.6	2Q3	–	–	–	–	–	–	–	9	–	–
8.7	–	–	1	–	1	2Q2	1	–	–	–	–
8.8	3	5	–	1	–	–	1	2Q3	–	–	–
8.9	–	–	–	–	–	–	–	–	–	2	–
9.0	–	–	–	–	–	–	1	–	–	–	–
9.1	–	–	–	–	1	3	–	–	–	–	–
9.2	1	–	–	–	–	–	–	–	–	–	–
9.3	1	–	–	–	–	–	2	1	–	–	–
9.4	–	–	1	3Q2	1	2	–	–	–	–	1
9.5	2	5	1	–	1	–	–	–	6Q2	–	–
9.6	–	–	–	–	1Q3	–	–	1	–	–	–
9.7	–	–	1	–	5	2	–	–	–	–	–
9.8	2	–	–	–	–	–	–	–	–	–	–
9.9	–	–	1	3	–	–	4	1	–	4	3Q2
10.0	–	–	1Q3	–	1	–	–	–	–	–	–
10.1	1	–	–	–	–	–	3Q3	1	–	–	–
10.2	1	9Q3	–	–	–	–	–	–	–	–	–
10.3	–	–	4	2	–	–	2	–	–	–	4
10.4	–	–	–	–	4	3	–	–	11	4	–
10.6	–	–	–	–	–	4	–	3	–	–	3
10.7	–	–	–	–	–	–	1	–	–	–	–
10.9	–	3	2	5	–	–	–	–	–	4Q3	–
11.1	–	–	1	–	–	3Q3	–	–	–	–	4
11.2	–	–	–	–	1	–	–	1	–	–	–
11.4	–	–	–	–	–	–	1	–	–	–	–
11.5	2	–	–	–	–	–	–	–	–	4	–
11.6	–	–	1	–	1	5	–	–	–	–	5Q3
11.7	–	–	–	–	–	–	–	–	7Q3	–	–
11.8	–	–	–	3	–	–	–	–	–	–	–
11.9	1	6	5	16	2	8	4	5	8	8	12

Below grade norm

Table XII

Learner Verification Study—Patterson Road School

Educationally Handicapped Students—Date of Study 7-75
I.Q.—*Short Form, Test of Academic Aptitude* 5-75
Pre Test (Reading) *Comprehensive Test of Basic Skills, Form S* 9-74
Post Test (Battery) *Comprehensive Test of Basic Skills, Form S* 5-75

Sex	Total I.Q.	Pre Voc.	Post Voc.	Pre Comp.	Post Comp.	Total Lang.	Total Math	Refer. Skills	Sci.	Soc. St.
					GRADE THREE					
Boy	N.A.	1.7	3.0	1.0	3.2	2.9	3.6	3.5	—	—
					GRADE FOUR					
Boy	60	1.0	1.0	1.0	1.0	—	—	2.1	—	—
Boy	83	1.6	2.3	1.8	2.1	2.9	2.8	3.5	2.2	2.5
Girl	91	1.0	4.3	1.4	3.0	3.0	3.5	2.1	3.1	4.2
Girl	91	1.0	3.0	1.7	2.2	3.0	3.6	2.7	2.9	3.0
					GRADE FIVE					
Boy	62	1.4	2.5	1.2	3.6	1.1	—	1.0	1.0	1.8
Boy	87	1.9	4.4	2.4	2.3	2.1	2.6	2.2	1.0	1.0
Boy	100	3.4	7.0	2.1	5.4	3.2	3.4	4.0	3.6	5.3
Boy	94	2.2	4.4	2.4	4.7	3.1	3.6	5.3	—	3.3
Boy	78	3.8	3.6	1.0	3.6	2.7	3.2	4.4	4.3	1.8
					GRADE SIX					
Boy	67	3.2	5.2	2.3	2.8	3.3	4.8	2.5	3.6	4.7
Boy	92	3.7	7.9	2.2	5.6	4.4	4.1	6.6	6.8	3.7
Boy	95	5.2	5.2	2.3	5.1	3.1	5.3	5.3	4.3	5.7
Boy	60	2.3	3.2	3.0	3.4	1.6	3.5	2.5	2.6	3.3
					GRADE TWO					
Girl	N.A.	Total Reading Pre Test 1.6			Total Reading Post Test 2.2					

Table XIII

Charted are mean pre and post test Total Reading scores for twenty-one students at each grade level two through six. The sample at each grade level is divided into three segments of seven pupils each and these are designated as *low, middle,* and *high.* In each case students in the *low* group had the seven lowest pre test scores; students in the *high* group had the seven highest pre test scores; and students in the *middle* group had the seven pre test scores which are clustered around the mean score for their grade level. Pre test in September, 1974 and post test in May, 1975 were with the *Comprehensive Test of Basic Skills, Levels C, 1 and 2, Form S.*

Grade Two—Total Reading—Grade Norm 2.8

LOW GROUP	I.Q. (N.A.)	PRE TEST 1.5	POST TEST 2.5	DIFFERENCE +1.0
MIDDLE GROUP	I.Q. (N.A.)	PRE TEST 2.3	POST TEST 3.6	DIFFERENCE +1.3
HIGH GROUP	I.Q. (N.A.)	PRE TEST 3.2	POST TEST 4.3	DIFFERENCE +1.1

Grade Three—Total Reading—Grade Norm 3.8

LOW GROUP	I.Q. (N.A.)	PRE TEST 1.5	POST TEST 4.4	DIFFERENCE +2.9
MIDDLE GROUP	I.Q. (N.A.)	PRE TEST 3.0	POST TEST 4.5	DIFFERENCE +1.5
HIGH GROUP	I.Q. (N.A.)	PRE TEST 5.1	POST TEST 6.6	DIFFERENCE +1.5

Grade Four—Total Reading—Grade Norm 4.8

LOW GROUP	I.Q. 85	PRE TEST 2.0	POST TEST 3.9	DIFFERENCE +1.9
MIDDLE GROUP	I.Q. 107	PRE TEST 3.4	POST TEST 5.7	DIFFERENCE +2.3
HIGH GROUP	I.Q. 120	PRE TEST 7.5	POST TEST 8.5	DIFFERENCE +1.0

Grade Five—Total Reading—Grade Norm 5.8

LOW GROUP	I.Q. 89	PRE TEST 2.2	POST TEST 4.9	DIFFERENCE +2.7
MIDDLE GROUP	I.Q. 104	PRE TEST 4.3	POST TEST 7.5	DIFFERENCE +3.2
HIGH GROUP	I.Q. 124	PRE TEST 8.1	POST TEST 10.1	DIFFERENCE +2.0

Grade Six—Total Reading—Grade Norm 6.8

LOW GROUP	I.Q. 87	PRE TEST 3.1	POST TEST 5.6	DIFFERENCE +2.5
MIDDLE GROUP	I.Q. 88	PRE TEST 4.7	POST TEST 6.8	DIFFERENCE +2.1
HIGH GROUP	I.Q. 125	PRE TEST 11.1	POST TEST 11.5	DIFFERENCE +0.4*

*Maximum score attainable on this form of the *C.T.B.S.* is 11.9. Two students had 11.9 pre test and four students had 11.9 post test scores.

Learner Verification Study
Hacienda La Puente Unified School District

Formula Phonics Reading Chain—Seven Programs
Date of Study—August, 1975

Hacienda La Puente is a large school district which serves all, or part, of a number of suburban communities in eastern Los Angeles County. There are twelve elementary schools in the district where some, or all, of the teachers use Formula Phonics methodology with students. Seven of these schools employ Reading Chains across three or more grade levels and they are the subject of this study.

A considerable body of the research attendant to the design of the Formula Phonics Reading Chain Programs was accomplished in schools in the district. Because each one of the Reading Chain schools operates separately from the others, the design and operation of the Reading Chains may vary markedly from school to school. There are, for instance, very different administrative procedures followed in the seven Reading Chain schools. There also are found many differences in pre and ongoing staff development procedures; in the length of time the reading groups meet each day; in the size of groups in the Reading Chain classrooms; in the kind of reading matter used with Dialog Groups; and in the length of time teachers work with a group before rotation.

Another reason for this diversity of design in Reading Chain programs is that the district serves a broad spectrum of students in terms of socio-economic status and ethnicity. District boys and girls come to school from some of the wealthiest homes in Los Angeles County and from some of the poorest. While most minority students in the district are Spanish surnamed, a few of the schools also serve small populations of students who are Black or Oriental. Reading Chain schools which serve E.S.E.A. Title I students are also forced to conform to the guidelines which are promulgated each year by the state of California's P.R.I.D.E. Evaluation Teams.

The Study

In October, 1974 the district's sixth graders were pretested with the *Comprehensive Test of Basic Skills, Level 2, Form Q.* At the same time, third graders were pre tested with the *Cooperative Primary, Form 23-B.* In May, 1975 the students were post tested with these same instruments. The district has provided first, second, and third quartile grade equivalent scores for each of the seven Reading Chain elementary schools. Ethnic data shown for each school is from the district's 1973-74 Racial and Ethnic Survey. To further highlight the student population in each school, a rough approximation of each school's median socio-economic status (S.E.S.) is also provided.

Dibble School—Grades Four Through Six Reading Chain

S.E.S.—Upper-Lower / Ethnicity 46.60%

Grade Six

		N=	Grade Norm	Reading Vocabulary	Reading Comprehension
Pre Test	Q1	98	6.2	3.9	3.9
Post Test	Q1	94	6.8	4.8	4.6
Difference	Q1	–		+0.9	+0.7
Pre Test	Q2	98	6.2	5.3	5.1
Post Test	Q2	94	6.8	6.8	6.9
Difference	Q2	–		+1.5	+1.8
Pre Test	Q3	98	6.2	6.5	6.9
Post Test	Q3	94	6.8	7.9	8.3
Difference	Q3	–		+1.4	+1.4

Fairgrove School—Grades Three Through Six Reading Chain

S.E.S. Middle-Lower / Ethnicity 44.40%

Grade Six

		N=	Grade Norm	Reading Vocabulary	Reading Comprehension
Pre Test	Q1	89	6.2	4.0	3.6
Post Test	Q1	92	6.8	4.3	4.0
Difference	Q1	–		+0.3	+0.6
Pre Test	Q2	89	6.2	5.1	4.7
Post Test	Q2	92	6.8	5.7	6.0
Difference	Q2	–		+0.6	+1.3
Pre Test	Q3	89	6.2	6.2	6.6
Post Test	Q3	92	6.8	7.1	7.3
Difference	Q3	–		+0.9	+0.7

Grade Three

Pre Test	N=64	Grade Norm 3.2	Q1	2.0	Q2	2.5	Q3	3.0
Post Test	N=61	Grade Norm 3.8	Q1	2.8	Q2	3.4	Q3	4.0
Difference	——		Q1	+0.8	Q2	+0.9	Q3	+1.0

Grazide School—Grades Two Through Six Reading Chain

S.E.S. Upper-Middle / Ethnicity 11.00%

Grade Six

		N=	Grade Norm	Reading Vocabulary	Reading Comprehension
Pre Test	Q1	91	6.2	5.0	5.3
Post Test	Q1	90	6.8	6.2	5.7
Difference	Q1	–		+1.2	+0.4
Pre Test	Q2	91	6.2	6.5	6.6
Post Test	Q2	90	6.8	7.1	7.3
Difference	Q2	–		+0.6	+0.7
Pre Test	Q3	91	6.2	7.4	8.3
Post Test	Q3	90	6.8	8.5	9.5
Difference	Q3	–		+1.1	+1.2

Grade Three

Pre Test	N=86	Grade Norm 3.2	Q1	2.7	Q2	3.3	Q3	4.0
Post Test	N=87	Grade Norm 3.8	Q1	3.9	Q2	4.3	Q3	4.6
Difference	——		Q1	+1.2	Q2	+1.0	Q3	+0.6

Kwis School—Grades Four Through Six Reading Chain

S.E.S.—(Bimodal) Middle-Lower and Middle-Middle / Ethnicity 28.20%

Grade Six

		N=	Grade Norm	Reading Vocabulary	Reading Comprehension
Pre Test	Q1	83	6.2	4.3	4.0
Post Test	Q1	89	6.8	5.1	4.9
Difference	Q1	–		+0.8	+0.9
Pre Test	Q2	83	6.2	5.5	6.0
Post Test	Q2	89	6.8	6.5	6.9
Difference	Q2	–		+1.0	+0.9
Pre Test	Q3	83	6.2	7.1	8.3
Post Test	Q3	89	6.8	7.9	8.3
Difference	Q3	–		+0.8	0.0

Los Robles School—Grades Two Through Six Reading Chain

S.E.S. Middle-Middle / Ethnicity 17.20%

Grade Six

		N=	Grade Norms	Reading Vocabulary	Reading Comprehension
Pre Test	Q1	88	6.2	5.1	4.9
Post Test	Q1	88	6.8	6.2	6.0
Difference	Q1	—		+1.1	+1.1
Pre Test	Q2	88	6.2	6.8	7.3
Post Test	Q2	88	6.8	7.1	8.3
Difference	Q2	—		+0.3	+1.0
Pre Test	Q3	88	6.2	7.9	9.5
Post Test	Q3	88	6.8	8.5	11.1
Difference	Q3	—		+0.6	+1.6

Grade Three

Pre Test	N=62	Grade Norm 3.2	Q1	2.6	Q2	3.3	Q3	3.9
Post Test	N=64	Grade Norm 3.8	Q1	3.1	Q2	4.0	Q3	4.3
Difference	—		Q1	+0.5	Q2	+0.7	Q3	+0.4

Palm School—Grades Two Through Six Reading Chain

S.E.S.—Upper-Lower / Ethnicity 25.00%

Grade Six

		N=	Grade Norms	Reading Vocabulary	Reading Comprehension
Pre Test	Q1	64	6.2	4.6	4.3
Post Test	Q1	63	6.8	5.3	5.3
Difference	Q1	—		+0.7	+1.0
Pre Test	Q2	64	6.2	6.0	6.0
Post Test	Q2	63	6.8	6.5	6.2
Difference	Q2	—		+0.5	+0.2
Pre Test	Q3	64	6.2	7.1	8.3
Post Test	Q3	63	6.8	7.4	8.3
Difference	Q3	—		+0.3	0.0

Grade Three

Pre Test	N=36	Grade Norm 3.2	Q1	2.4	Q2	3.0	Q3	4.0
Post Test	N=38	Grade Norm 3.8	Q1	2.7	Q2	3.5	Q3	4.2
Difference	—		Q1	+0.3	Q2	+0.5	Q3	+0.2

Wedgeworth School—Grades Two Through Six Reading Chain

S.E.S. Middle-Middle / Ethnicity 23.30%

Grade Six

		N=	Grade Norms	Reading Vocabulary	Reading Comprehension
Pre Test	Q1	55	6.2	5.3	5.1
Post Test	Q1	56	6.8	6.2	6.6
Difference	Q1	—		+0.9	+1.5
Pre Test	Q2	55	6.2	6.2	6.6
Post Test	Q2	56	6.8	7.1	8.3
Difference	Q2	—		+0.9	+1.7
Pre Test	Q3	55	6.2	7.4	8.9
Post Test	Q3	56	6.8	9.1	9.5
Difference	Q3	—		+1.7	+0.6

Grade Three

Pre Test	N=59	Grade Norm 3.2	Q1	2.8	Q2	3.5	Q3	4.1
Post Test	N=58	Grade Norm 3.8	Q1	3.8	Q2	4.1	Q3	4.4
Difference	—		Q1	+1.0	Q2	+0.6	Q3	+0.3

Summary—Seven Schools—Hacienda La Puente

Grade Six

		N=	Grade Norms	Reading Vocabulary	Reading Comprehension
Pre Test	Q1	568	6.2	4.6	4.4
Post Test	Q1	572	6.8	5.4	5.3
Difference	Q1	—		+0.8	+0.9
Pre Test	Q2	568	6.2	5.9	6.0
Post Test	Q2	572	6.8	6.7	7.1
Difference	Q2	—		+0.8	+1.1
Pre Test	Q3	568	6.2	7.1	8.1
Post Test	Q3	572	6.8	8.1	8.9
Difference	Q3	—		+1.0	+0.8

Summary—Five Schools—Hacienda La Puente

Grade Three

Pre Test	N=307	Grade Norm 3.2	Q1	2.5	Q2	3.1	Q3	3.8
Post Test	N=308	Grade Norm 3.8	Q1	3.3	Q2	3.9	Q3	4.3
Difference	—		Q1	+0.8	Q2	+0.8	Q3	+0.5

Summary—Three S.E.S. "Low" Schools—Dibble, Fairgrove, and Palm

Grade Six

		N=	Grade Norms	Reading Vocabulary	Reading Comprehension
Pre Test	Q1	251	6.2	4.2	3.9
Post Test	Q1	249	6.8	4.8	4.6
Difference	Q1	–		+0.6	+0.7
Pre Test	Q2	251	6.2	5.5	5.3
Post Test	Q2	249	6.8	6.3	6.4
Difference	Q2	–		+0.8	+1.1
Pre Test	Q3	251	6.2	6.6	7.3
Post Test	Q3	249	6.8	7.5	8.0
Difference	Q3	–		+0.9	+0.7

Summary—Three S.E.S. "Middle" Schools—Grazide, Los Robles, and Wedgeworth

Grade Six

		N=	Grade Norms	Reading Vocabulary	Reading Comprehension
Pre Test	Q1	234	6.2	5.1	5.1
Post Test	Q1	234	6.8	6.2	6.1
Difference	Q1	–		+1.1	+1.0
Pre Test	Q2	234	6.2	6.5	6.8
Post Test	Q2	234	6.8	7.1	8.0
Difference	Q2	–		+0.6	+1.2
Pre Test	Q3	234	6.2	7.6	8.9
Post Test	Q3	234	6.8	8.7	10.0
Difference	Q3	–		+1.1	+1.1

Learner Verification Study
Nome Agency, Bureau of Indian Affairs

Formula Phonics Reading Chain—First Semester
Date of Study—May, 1974

Ten Elementary Schools: Grades 3-8

Funding: E.S.E.A., Title I

Test Instrument: Wide Range Achievement Test

Pre-Test: October, 1973

Post-Test: April, 1974

Period Between Pre and Post Tests: 7 Months

N=594

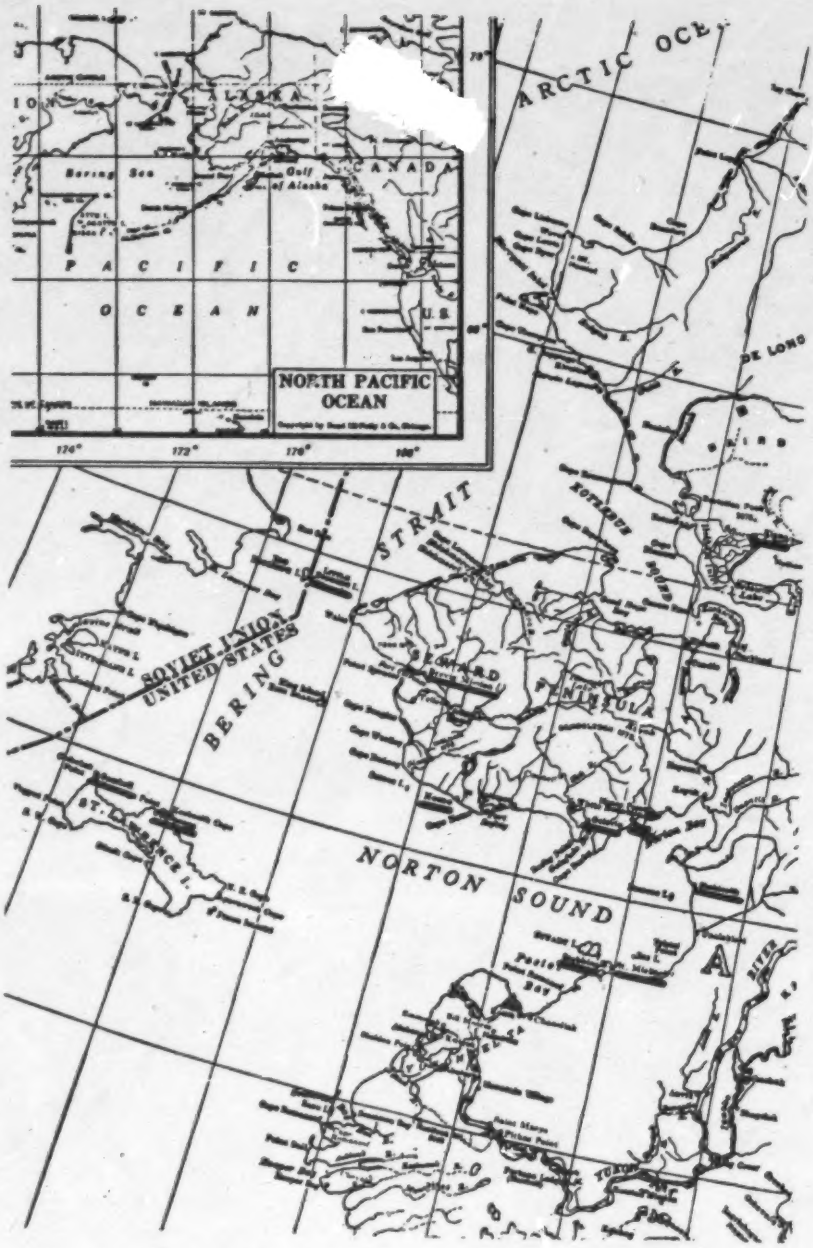
Formula Phonics Program Employed During Last Four Months of Test Period

Grade	Gain
3rd	1.3
4th	1.5
5th	1.3
6th	1.6
7th	1.3
8th	2.0
All Grades	1.5
Less Three Months (October-December)	− .3*
Gain During Last Four Months	1.2

*Data from the agency shows median growth in reading for all schools has never exceeded one-half month for each month's instruction during any previous reporting period. Hence, the subtraction of three months gain from the total is *twice* that which would be statistically acceptable.

Average gain during the period of the Formula Phonics Program equalled three months for each month of instruction.

Report of Scores by Grade and Village



Brevig Mission

Grade	Gain
3rd	1.8
4th	1.6
5th	1.0
6th	2.0
7th	2.2
8th	2.9

Diomede*

Grade	Gain
3rd	.5
4th	1.1
5th	.8
6th	.0
7th	.2
8th	2.5

Elim

Grade	Gain
3rd	1.4
4th	1.3
5th	1.5
6th	2.7
7th	1.8
8th	.5

Gambell

Grade	Gain
3rd	2.5
4th	3.2
5th	1.6
6th	1.8
7th	2.7
8th	4.5

Golovin**

Grade	Gain
3rd	.9
4th	.1
5th	.3
6th	.8
7th	.6
8th	1.5

Kiana

Grade	Gain
3rd	.8
4th	.9
5th	1.3
6th	1.0
7th	1.4
8th	1.8

St. Michael

Grade	Gain
3rd	.4
4th	.6
5th	.7
6th	.8
7th	1.2
8th	.9

Savoonga

Grade	Gain
3rd	2.7
4th	2.8
5th	3.7
6th	3.6
7th	1.2
8th	1.8

Shaktoolik

Grade	Gain
3rd	1.4
4th	2.0
5th	1.0
6th	.4
7th	1.5
8th	2.7

Stebbins

Grade	Gain
3rd	.5
4th	1.2
5th	.8
6th	2.7
7th	.6
8th	1.6

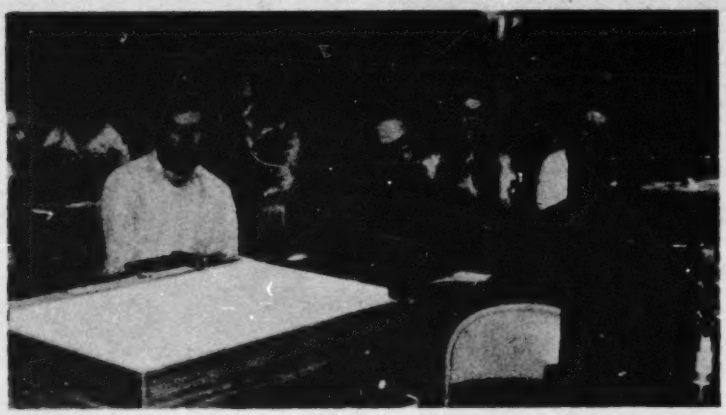
*Due to isolation teachers were unable to leave Diomede for the training session.

**The entire Golovin School was in Oregon for 6 weeks and thus were not involved in the program during that period of time.

Learner Verification Study
Nome Elementary School—Nome Public Schools

Formula Phonics Reading Chain—Third Semester
Date of Study—July, 1975

Most pupils in the Nome Elementary School Formula Phonics Reading Chain were pre and post tested with both the California Achievement Test (vocabulary and comprehension) and the Durrell Reading Test.



Video Staff Development Session

Test	N=	Pre Test (Sept. 74)	Post Test (May, 75)	Gain
Grade 2				
C.A.T.	50	2.1	3.1	+1.0
Durrell	45	2.3	3.4	+1.1
Grade 3				
C.A.T.	71	2.4	3.3	+0.9
Durrell	60	2.3	3.4	+1.1
Grade 4				
C.A.T.	52	2.9	4.1	+1.2
Durrell	44	3.1	4.2	+1.1

Dialog Group
Nome Public School

Test	N=	Pre Test (Sept. 74)	Post Test (May, 75)	Gain
Grade 5				
C.A.T.	60	3.8	4.8	+1.2
Durrell	58	None	4.8	
Grade 6				
C.A.T.	59	5.4	6.8	+1.4
Durrell	57	None	5.7	

Dialog Group
Nome Public School

Grade 7				
C.A.T.	55	4.5	6.0	+1.5
Durrell	48	4.8	5.8	+1.0
Grade 8				
C.A.T.	57	6.1	7.4	+1.3
Durrell	None	--	--	---

Learner Verification Study
Mentone School—Redlands Unified School District

Formula Phonics Reading Chain—First Year
Date of Study—July, 1975

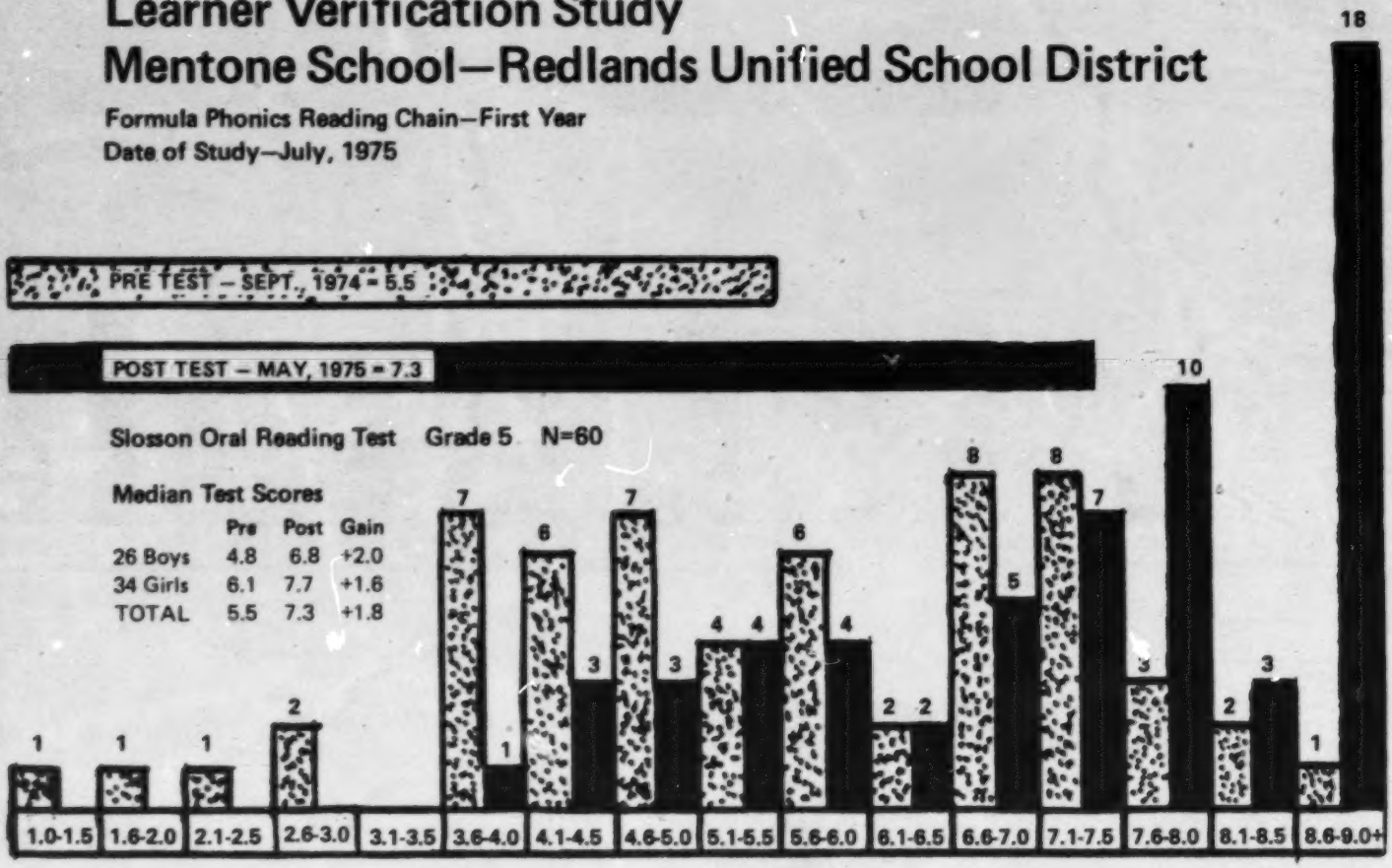
PRE TEST – SEPT., 1974 = 5.5

POST TEST – MAY, 1975 = 7.3

Slosson Oral Reading Test Grade 5 N=60

Median Test Scores

	Pre	Post	Gain
26 Boys	4.8	6.8	+2.0
34 Girls	6.1	7.7	+1.6
TOTAL	5.5	7.3	+1.8



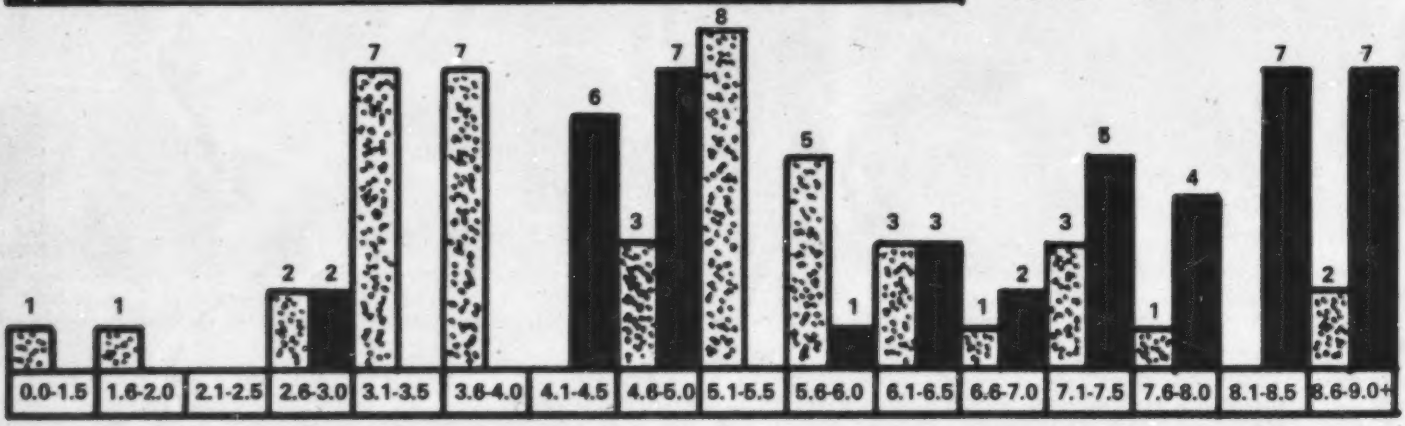
Slosson Oral Reading Test Grade 4 N=44

Median Test Scores

	Pre	Post	Gain
24 Boys	4.9	6.4	+1.5
20 Girls	5.0	6.8	+1.8
TOTAL	4.9	6.6	+1.7

PRE TEST – SEPT., 1974 = 4.9

POST TEST – MAY, 1975 = 6.6



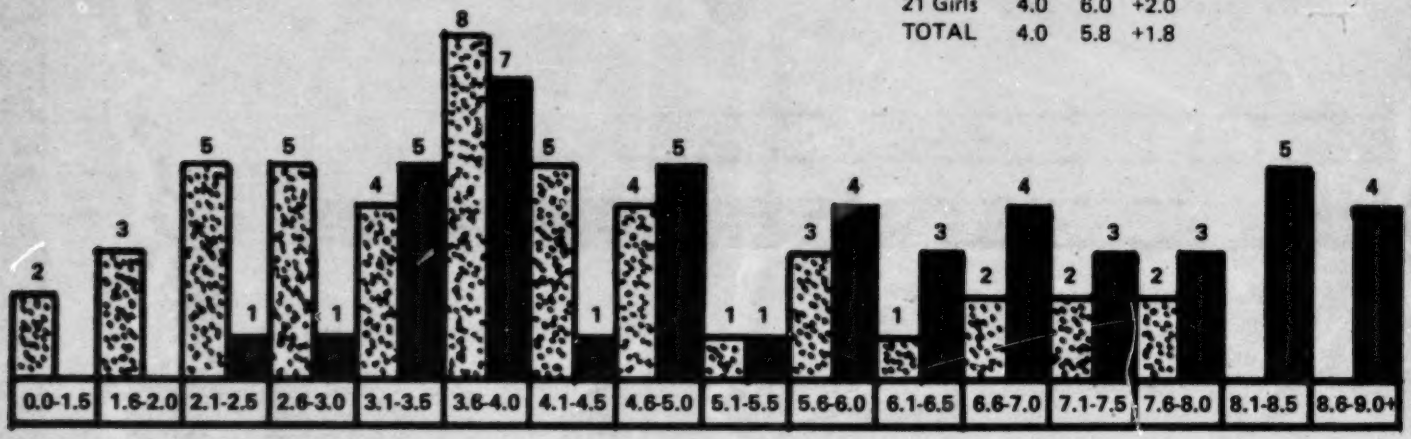
During the 1974-75 school year 28 first graders were exposed to the Formula Phonics Reading System for periods ranging from two to seven months. They were neither placed in Reading Chain groups nor pre tested. When tested in May with the Slosson Oral Reading Test, scores ranged from 0.9 to 6.4 Mean—2.8; Mode—2.7; Median—3.0

PRE TEST – SEPT., 1974 = 4.0

POST TEST – MAY, 1975 = 5.8

Slosson Oral Reading Test
Grade 3 N=47
Median Test Scores

	Pre	Post	Gain
26 Boys	4.1	5.7	+1.6
21 Girls	4.0	6.0	+2.0
TOTAL	4.0	5.8	+1.8

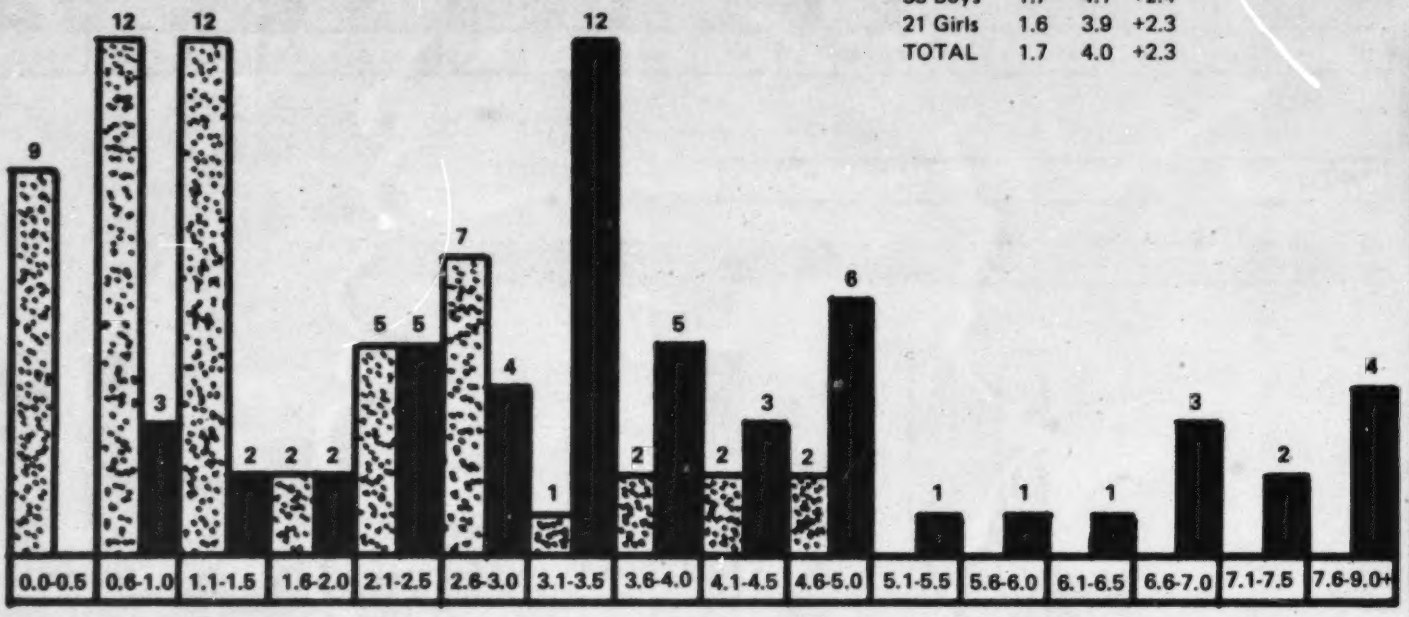


PRE TEST – SEPT., 1974 = 1.7

POST TEST – MAY, 1975 = 4.0

Slosson Oral Reading Test
Grade 2 N=54
Median Test Scores

	Pre	Post	Gain
33 Boys	1.7	4.1	+2.4
21 Girls	1.6	3.9	+2.3
TOTAL	1.7	4.0	+2.3

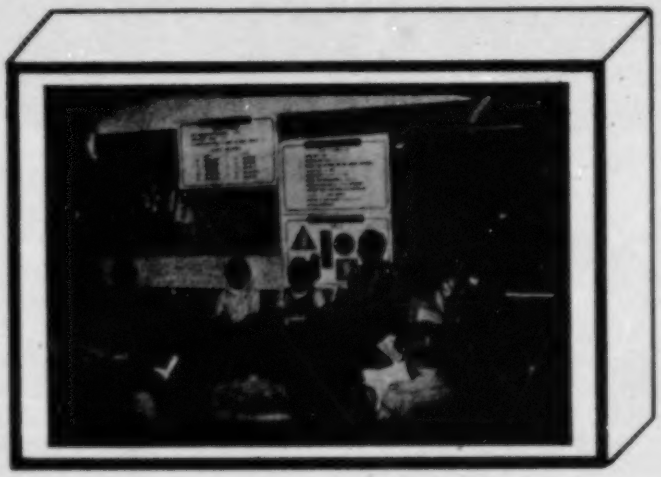


Summary
Second through sixth graders at Mentone School were pre tested in September, 1974, and post tested in May, 1975, with the Slosson Oral Reading Test. During that same period they were funded with phonetic decoding and spelling information with the video tapes and then were placed in Reading Chain Dialog Groups. Sixth graders were not post tested.

Grade	N=	Pre Test (Sept. 74)	Post Test (May, 75)	Gain
5	60	5.5	*7.3+	+1.8
4	44	4.9	*6.6+	+1.7
3	47	4.0	5.8	+1.8
2	54	1.7	4.0	+2.3

*12 fifth and 3 fourth graders scored at the high school level, 9.0+

A Video Trip To Patterson Road School



ELEMENTARY READING CHAIN-LANGUAGE PROCESSING PROGRAM
DESIGNED FOR PATTERSON ROAD ELEMENTARY SCHOOL
BY
INTEGRATIVE LEARNING SYSTEMS, INC.
GLENDALE, CALIFORNIA

During school year 1973-74 the American Institutes for Research, under the sponsorship of the U.S. Office of Education's National Right to Read program, conducted a study to locate the *25 most successful reading programs in the country* and *to develop in-depth information packages which will help other educators to replicate these programs.*

In its May 5, 1975, "Washington Monitor" section, **Education U.S.A.** suggests that, *The search, conducted for USOE's Right to Read program by the American Institutes for Research (AIR), encompassed all reading programs from pre-school to adult funded by a variety of sources, making it the most comprehensive of its kind ever done. During the search more than 1500 programs were studied by AIR and of that number 27 were recommended to Right to Read.*

In October of 1974, staffs at Patterson Road School and at Integrative Learning Systems were informed by AIR that *your reading program* (is to) *be included in the nationally disseminated catalog of reading programs which we are preparing.* The VIDEO TRIP TO PATTERSON ROAD SCHOOL has been prepared as a dissemination project attendant to that selection.

To arrange for others to view this VIDEO TRIP TO PATTERSON ROAD SCHOOL or to learn more about the Formula Phonics Videotape Reading Chain Programs contact:

INTEGRATIVE LEARNING SYSTEMS INC.
326 W. Chevy Chase Dr. #11
Glendale, California 91204
(213) 243-2675

CS082 761

Schools DO Make a Difference

A PROGRAM EVALUATION SCALE

In 1971, George Weber isolated certain critical factors he found to be present in his study of four successful reading programs. He published that information in his *Inner-City Children Can Be Taught to Read.*[1] In 1975, the Massachusetts Advisory Council on Education published the results of a study conducted by Educational Research Corporation.[2] This study considered twenty Massachusetts schools chosen to "represent a reasonable cross-section of city schools within the Commonwealth." Borrowing heavily from Weber's work, it evaluated and contrasted each school's program against a total of eleven factors.

The eleven factors used in the Massachusetts study have been selected for use in evaluating and contrasting the Formula Phonics Reading Chain Program at Patterson Road School and programs in other schools. The five point rating scale used in the Massachusetts study has also been retained. Here, the evaluator considers each of the eleven factors and assigns each a rating from "high" to "low." These ratings may then be weighed on a scale from zero to four where:

HIGH = 4 points (major element in program)
TENDING HIGH = 3 points
MEDIUM = 2 points
TENDING LOW = 1 point
LOW = 0 point (element missing or non-effectual)

By using this measure it is possible to evaluate a school's program independently by considering the number of factors rated "high" or "tending high" against those rated "medium," "tending low," or "low." It is also possible to contrast programs in two or more schools *quantitatively* by adding the points in each of the columns or *qualitatively* by considering the eleven factors separately. In the Massachusetts study the rating of the eleven factors in four "successful" schools would be 28 and in the three "unsuccessful" schools 7, with the other schools falling somewhere in between.

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[1] G. Weber. *Inner-City Children Can Be Taught to Read.* Washington, D.C. Council for Basic Education, 1971.

[2] A. Ellis. *Success and Failure: A Summary of Findings and Recommendations for Improving Elementary Reading in Massachusetts City Schools.* Watertown, Massachusetts. Educational Research Corporation, 1975.

Evaluation-Contrast Form

DIRECTIONS: After your *Video Trip to Patterson Road School* will you please evaluate the total reading program in terms of the eleven factors listed below. Use a zero (low) to four (high) scale. Later, you may use this same form to evaluate another program with which you are familiar and then contrast the two.

EVALUATION FACTORS	CONTRAST SCALE: Patterson Road School	CONTRAST SCALE: _____ School
1. **LEADERSHIP:** To what extent does the program have an identified leader and to what degree does that person function as a supervisory force?		
2. **COORDINATION:** To what degree do the instructional elements of the *total* reading program articulate both vertically—from lower to higher grades—and horizontally—within each grade?		
3. **ADDITIONAL READING PERSONNEL:** To what degree is the regular staff supplemented, or served, by other specially trained personnel?		
4. **ATMOSPHERE:** To what degree are the specific teaching processes which characterize the total reading program seen to be orderly, purposeful, quiet, and relaxed?		
5. **INDIVIDUALIZATION:** To what degree does the total reading program provide for, and adapt to, the varied learning styles, educational and social backgrounds, and identified needs of the students?		
6. **EVALUATION:** To what degree does the program provide for the systematic evaluation of student needs and progress and then make this information available to the teaching staff?		
7. **HIGH EXPECTATION:** To what degree do teachers hold positive expectations concerning the capabilities of their own students and of students in general?		
8. **STRONG EMPHASIS ON READING:** To what degree does reading permeate the fabric of the school's total educational program?		
9. **USE OF PHONICS:** To what degree is the use of phonics centered in the total reading and instructional program?		
10. **STAFF TRAINING AND EXPERIENCE:** To what degree is the staff's previous classroom experience, pre-service education, post-graduate classwork, and in-service training reflected in program design and implementation?		
11. **QUALITY OF TEACHING:** To what degree is teaching excellence seen in classroom management, interaction between teacher and pupils, and in observable learning activities?		
TOTAL RATING		

DATE OF EVALUATION: _____ NAME OF SECOND SCHOOL: _____

TYPE OF SECOND PROGRAM (I.E., OPEN, ONE-TO-ONE, ETC.) _____

REMARKS: _____

Program Information

BACKGROUND All program design, staff development, and program materials used in the Formula Phonics Videotape Reading Chain Program at Patterson Road School, Orcutt School District, Santa Barbara County, California, were developed and are published by Integrative Learning Systems, Inc., Glendale, California. Integrative Learning Systems has on videotape every element in its program at Patterson Road School and has used that material to produce five program design-staff development videotapes which, when combined with its language processing videotapes and printed materials, may be used to replicate the program in any other school. In order to disseminate information about the Patterson Road Reading Chain and shield staff and pupils there from unlimited visitations, Integrative Learning Systems has prepared for study by educators a VIDEO TRIP TO PATTERSON ROAD SCHOOL.

INFORMATION ABOUT THE TAPES All classroom sequences and interviews were taped on-site at Patterson Road School on May 22, 1974. At that time third through sixth graders had been in the program 16 months and had worked through 11 rotations of the Reading Chain. Second graders had been in the program 8 months and had gone through 5 teacher rotations. Except in the *Misty of Chincoteague* and *Flowers for Algernon* sequences, where students are processing pre-read material, all groups are reading and processing material which they have not previewed.

REPLICATION The Reading Chain Program is being replicated in schools in the following California school districts:

Atascadero	Fresno	Hacienda La Puente	Los Angeles	Orcutt	Rowland
Calipatria	Goleta	Hope	Montebello	Redlands	Santa Barbara

There are also Reading Chains in schools serving native Americans who are:

Aleut	Arikara	Eskimo	Mandan	Papago	Sioux
Apache	Athabascan	Hidatsa	Navajo	Pueblo	

National Right to Read's description of the program is printed below:

"**PROGRAM SIZE AND TARGET POPULATION** The program serves 320 students in grades 2–6. The majority of students are white and come from low- and middle-income homes in the suburbs of a small city near a large military installation.

YEAR STARTED The program began in 1972.

STAFF The program employs the school's 11 regular teachers. The principal and a reading specialist coordinate and monitor the program. On-site training includes viewing both staff-development and pupil-patterning video tapes.

MAJOR FEATURES Staggered scheduling allows 2 ungraded Reading Chains of 12 groups each to meet 45 minutes daily. Grouping is not by grade level but by reading comprehension. The reading specialist and classroom teachers teach the Reading Chain groups in a morning and afternoon reading class called a "Dialog Group." Less advanced groups serve 10 to 12 pupils: the more advanced serve 15 to 18. Initially, teachers are assigned groups by lottery and rotate groups every 5 weeks. Pupils move up the Chain on teacher recommendation. The program starts with every pupil viewing the same 10 half-hour Formula Phonics video tapes, which teach them a system for decoding. During the Dialog Groups, the oral reader (called the "model") uses the system to decode unfamiliar words. Reinforcement is accomplished in a companion spelling program and in follow-up activities. In every room, wall charts display the formula and basic decoding information. Literature that is read and discussed in Dialog Groups is at least 2 years *above* the group's tested total reading level. No child is ever placed in a group where he will read below his class level. Reading matter—short stories first, then novels and other works—is chosen for its literary worth and interest level. Instruction is designed to move quickly from questions that clarify the reading to discussions involving Socratic dialoging, which teaches critical thinking skills and open-ended questioning at the highest level. Thinking processes and reading skills are strengthened by paper-and-pencil tasks keyed to the reading experience. Pupils move from the Dialog Group to regular classrooms where they read, orally or silently, in content areas and for information and pleasure.

FACILITIES, MATERIALS, EQUIPMENT Essential items include a video playback unit and television set, a set of video tapes or cassettes, pupil patterning and spelling books, teacher manuals, and wall charts. A wide range of reading matter and reference materials is also desirable."